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Regional Powers & Energy Integration: South Africa in the Southern African Power Pool

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Abstract

Energy access is essential for sustainable development, yet more than half of sub-Saharan Africa lacks access to electricity. Regional energy integration is a viable solution to this problem, particularly through regional power pools (regional markets to trade electricity between utilities). However, African states have mostly developed their power sectors in isolation, and the role of regional powers – states exerting domination over regional processes – in these power pools is unpredictable. To address this puzzle, I investigate the participation of a particular regional power, South Africa, in the energy integration projects of its regional power pool, the Southern African Power Pool (SAPP).

Using data from 22 in-depth interviews of elite and expert actors in the Southern African energy sector, this qualitative-interpretive, single case study analysis builds theory and contributes to the literatures on regional powers, regional energy integration, and global political economy. I use thematic network analysis to generate intricate thematic networks of the factors shaping regional powers' participation in regional power pools, and then map the interactions between relevant actors. This multifaceted analysis illuminates an important type of regional organisation hitherto neglected in International Relations literature.

Ultimately, I argue that South Africa's participation in the SAPP can be explicated as a complex web of interactions between three interconnected groups of factors: regional political dynamics in Southern Africa, South African domestic factors, and the institutional characteristics of the SAPP. Contrary to the literature's overemphasis of domestic electricity supply deficiencies, I argue that regional political dynamics are more important and co-constitute the other two groups of factors. I unmask key regional factors, including political willpower for regional cooperation and regional project financing, which contextualise the political motivations for South Africa's energy policies and shape the commercial rationale for participating in regional power pools.

Abbreviations

AU	African Union
BRICS	Brazil, Russia, India, China, and South Africa Group of States
CEC	Copperbelt Energy Corporation (Zambia)
COMESA	Common Market for Eastern and Southern Africa
DFI	Development Finance Institution (also known as a development bank)
DMRE	Department of Mineral Resources & Energy (South Africa)
DRC	Democratic Republic of the Congo
EAC	East African Community
EAPP	Eastern Africa Power Pool
ECCAS	Economic Community of Central African States
ECOWAS	Economic Community of West African States
EU	European Union
EXCO	Executive Committee (of an organisation/company)
FDI	Foreign Direct Investment
G20	Group of Twenty Intergovernmental Forum
GPE	Global Political Economy
HVDC	High-Voltage Direct Current (transmission lines/power systems)
IPP	Independent Power Producer
IR	International Relations
IRP	Integrated Resource Plan (South Africa)
JETP	Just Energy Transition Partnership
MNC	Multinational Corporation
MW	Megawatt
NPU	National Power Utility
NERSA	National Energy Regulator of South Africa
PPA	Power Purchase Agreement
PV	Photovoltaic
REC	Regional Economic Community
RERA	Regional Energy Regulators Association of Southern Africa

SACU	Southern African Customs Union
SADC	Southern African Development Community
SAPP	Southern African Power Pool
SAPP-CC	SAPP Coordination Centre
SAPP-PAU	SAPP Project Advisory Unit
UN	United Nations
USAID	US Agency for International Development
WAPP	West African Power Pool
ZESA	Zimbabwe Electricity Supply Authority
ZESCO	Zambia Electricity Supply Corporation

Table of Contents

Chapter 1: Introduction ***8***

1.1 Research Puzzle *13*

1.2 Contribution *19*

1.3 Plan of the Thesis *23*

Chapter 2: Literature & Theory ***25***

2.1 Regionalist and Global Political Economic Literature *26*

2.2 Key Explications in the Literature *28*

Domestic Energy Supply 28

Exploitation of Regional Power Pools for National Interest 31

Globalising of Regional Energy Projects 33

Traditions of Guarding National Sovereignty 35

Opportunities & Constraints of Regional Energy Cooperation 37

2.3 Preliminary Theorising *40*

Chapter 3: Methodology ***43***

3.1 Qualitative-Interpretive Research Design *43*

3.2 Single Case Study Methods *47*

Casing 48

An Overview of the SAPP 52

Temporal & Geographic Scope 54

Actors 55

3.3 Data Generation: In-Depth Interviewing *56*

3.4 Data Analysis: Thematic Network Analysis *61*

Chapter 4: Analysis ***67***

4.1 Regional Political Dynamics *74*

4.2 South African Domestic Factors *89*

4.3 Institutional Characteristics of the SAPP *98*

Chapter 5: Discussion ***106***

5.1 Revisiting the Literature *106*

5.2 Mapping the Interactions *111*

5.3 Finalising the Argument *115*

Chapter 6: Conclusion ***119***

6.1 Regional Energy Integration in Comparative Perspective *120*

6.2 Reflections *122*

Appendices ***124***

A. African Regional Power Pools 124

B. SAPP Membership (as of April 2022) 125

C. SAPP Demand & Supply (as of March 2021) 126

D. Anonymised Interview Record 127

E. Participant Recruitment Email Template 129

F. Research Ethics Approval 131

G. Participant Information Sheet 132

H. Interview Topic Guide 137

I. Phases of the Thematic Network Analysis 145

J. Codebook: From Basic to Organising Themes 147

K. Hierarchy Chart of Organising & Global Themes 152

L. Detailed Map of Actors' Interactions 153

Reference List ***154***

List of Figures[1]

Figure 1: SAPP Grid Map (as of April 2022) 53
Figure 2: The Structure of a Thematic Network 62
Figure 3: The Global Themes 70
Figure 4: Thematic Network for Regional Political Dynamics 75
Figure 5: Thematic Network for South African Domestic Factors 90
Figure 6: Thematic Network for Institutional Characteristics of the SAPP 99
Figure 7: Map of Actors' Interactions 112

List of Tables[2]

Table 1: From Organising Themes to Global Themes 69
Table 2: Most-Frequently-Referenced Organising Themes 74

[1] Excludes figures in appendices.
[2] Excludes tables in appendices.

Chapter 1: Introduction

More than half of sub-Saharan Africa lacks access to electricity – the lowest electricity access rate in the world.[1] Even South Africa, the regional economic powerhouse of Southern Africa, has experienced a constant stream of near-daily blackouts (known as 'loadshedding'), leaving millions of citizens without electricity: in 2022, the state's most intensive year of blackouts to date, loadshedding occurred for 43% of the hours in the calendar year.[2] On the topic of sustainable development in Africa, there are few matters as urgent as electricity access and energy security.

Regional energy integration is a viable solution to this electricity access problem, particularly in sub-regions that have immense energy potential, like Southern Africa. *Regional power pools* – regional markets to trade electricity between power utilities in neighbouring states – are useful organisations to facilitate regional energy integration. However, African states have mostly developed their power sectors in isolation, and the effectiveness of regional power pools around the continent remains limited.

The role of *regional powers* – states able to establish some form of domination over regional processes – is critical to energy integration in their respective regions, yet regional powers rarely act in a uniform manner given their relative regional dominance. We do not have a clear understanding of why sub-Saharan African regional powers do or do not participate in their regional power pools. To address this puzzle, I investigate a

[1] UNCTAD, *Commodities at a Glance*, UN Conference on Trade and Development (Geneva, 2023).
[2] CSIR, *Statistics of Utility-Scale Power Generation in South Africa 2022*, Council for Scientific and Industrial Research (Pretoria, 2023).

particular regional power, South Africa, and its regional power pool, the Southern African Power Pool (SAPP), asking, *how can South Africa's participation in the SAPP's energy integration projects be explicated?* The process of 'explication', unlike explanation, interpretively seeks to analyse the meaning and significance of phenomena.

I argue that South Africa's participation in the SAPP can be explicated as a complex web of interactions between three interconnected groups of factors: regional political dynamics in Southern Africa, domestic factors in South Africa, and the institutional characteristics of the SAPP. Contrary to the literature's tendency to overemphasise South Africa's domestic electricity supply deficiencies, I argue that regional political dynamics in Southern Africa are more important and co-constitute the other two groups of factors. Furthermore, I unmask previously under-theorised regional factors, including political willpower for regional cooperation and regional project financing, which contextualise the political motivations for South Africa's energy policies and shape the commercial rationale for participating in regional power pools.

This paper's qualitative-interpretive research design is located within the 'heterodox' approach to global political economy,[3] and emphasises complexity and processes through the 'thick' analysis of a single case. I build theory abductively, through an iterative back-and-forth between the theorising and data, to develop the concept of a regional power

[3] Though 'international political economy' ('IPE') is the common label for the field, it is better captured by 'global political economy' ('GPE'), to encapsulate all of the processes of structural change that are *global* in scope – involving states, non-state actors, and private actors. See Nicola Phillips, 'Global Political Economy,' in *Globalisation of World Politics*, ed. John Baylis, Steve Smith, and Patricia Owens (Oxford: OUP, 2022).

pool, which has hitherto been largely neglected in International Relations[4] literature. The casing process selects a historical 'champion' of regional energy integration, South Africa, which, despite being the regional power within the Southern African Development Community (SADC), faces a domestic electricity crisis. Within the timeframe of 2001-2022, I attempt to understand the political motivations[5] for South Africa's participation (and recently, lack thereof)[6] in its regional power pool, the SAPP, which is the most functional power pool in Africa, but still endures limited regional energy integration.

The intersection of two strands of IR literature, on *comparative regionalism*[7] and the *global political economy of energy*, provides a compelling theoretical backbone to this puzzle, and suggests that there are five key explications for African regional powers' participation in their regional power pools: regional powers' domestic energy supply, their exploitation of power pools for their national interests, the globalising of regional energy projects, traditions of guarding national sovereignty, and the opportunities/ constraints associated with regional energy cooperation. Yet this same literature faces limitations, including oversimplification of the political dynamics shaping the decision-

[4] As per academic convention, I refer to the academic discipline of 'International Relations' ('IR') (upper-case), but I refer to the issues it studies as 'world politics' – a more inclusive term for the wide set of actors in the world. See John Baylis, Steve Smith, and Patricia Owens, *Globalisation of World Politics*, 9th ed. (Oxford: OUP, 2022).

[5] I understand 'political motivations' as the underlying reasons why actors engage in world politics, which may include factors such as power, security, ideology, and economic interests. See Robert Art, Timothy Crawford, and Robert Jervis, *International Politics* (Maryland: Rowman & Littlefield, 2023).

[6] South Africa's participation in the SAPP has been complex: the state was the underlying political and economic force behind the development of the power pool, yet in the mid-2000s began disengaging from the SAPP and pursuing energy individualism instead.

[7] 'Comparative regionalism' refers to the current phase of the field commonly known as 'regionalism'. See Fredrick Söderbaum, 'Old, New, and Comparative Regionalism,' in *Oxford Handbook of Comparative Regionalism*, ed. Tanja Börzel and Thomas Risse (Oxford: OUP, 2016).

making, narrow confinement to the interstate level of analysis, too much emphasis on the *effects* of the presence of a regional power, limited consensus on how regional powers respond to the globalising of energy projects, neglect of the role of ideational factors, and a lack clarity on the political mechanisms whereby domestic generation supply shortfalls result in decreased participation in regional energy integration.

These explications find some support when looking at the literature specifically on South Africa's participation in the SAPP. However, the relevant texts reviewed make just passing reference to this paper's research topic, the scholarship lacks the theoretically-grounded, primary source-based methodological rigour needed to establish political motivations, and these more specific works still face similar shortcomings to the broader literature mentioned above. Thus, the research puzzle and state of the literature on the topic indicate a need for this paper's research and methodology.

My primary method of data generation utilised one of the most effective methods for understanding political motivations, in-depth interviews: I conducted 22 interviews, both in-person in South Africa and online, of public sector 'elites', in either the South African energy sector or the SADC's regional energy organisations, as well as Southern African experts and academics familiar with the matter. My elite interviews included officials at the highest levels of Eskom (South Africa's state-owned electricity utility) and the SAPP. I recruited these participants using a combination of snowball-sampling, extant personal connections, and 'cold emailing' participants with the potential leverage to help disentangle the complicated puzzle of the SAPP.

My primary method of data analysis, thematic network analysis, is used to analyse the interview transcripts. This codebook-based approach is useful for developing, analysing, and interpreting patterns across qualitative data, aided by web-like 'thematic networks'. Assisted by *NVivo*, I draw on 509 references from the interviews to generate 162 'Basic Themes', which I subsequently narrow to 20 'Organising Themes', and ultimately three 'Global Themes' – the overall metaphors arising from the interviews. I draw on these themes to map the interactions between actors relevant to the research question, to help understand the complex context in which regional powers participate in their regional power pools. Such depth of analysis and understanding is unparalleled in the literature, and helps to fill the lack of theorising and data on this topic, laying the foundations for further research on African regional powers and regional energy integration.

In the remainder of this chapter, I first discuss the research puzzle that motivates this paper, before I elaborate on the paper's conceptual, theoretical, empirical, and policy contributions. Finally, I lay out the roadmap for the rest of the paper.

1.1 Research Puzzle

The political economy of energy in sub-Saharan Africa amounts to a puzzling picture. Half the region[8] lacks access to electricity, and the entire continent faces unreliable supply issues due to persistent energy shortages.[9] In the face of these issues, there are strong benefits to regional energy integration, which could leverage financial resources, reduce the cost of supply through economies of scale, diversify energy resources away from fossil fuels, and improve reliability through pooling across a diversity of suppliers.[10]

Indeed, sub-regions like Southern Africa have immense energy potential, including multiple hydro-rich states and favourable endowments of sun and wind, such that regional energy integration offers the chance both to reduce emissions and increase power supply in a short timeframe.[11] A *regional power pool*, which is a type of regional organisation providing a regional market to trade electricity between power utilities in multiple

[8] I understand a 'region' as a community linked together by both a geographical relationship and a degree of mutual interdependence. In this sense, regions are imagined communities, fluid and interchangeable, operating at multiple levels of analysis. This conceptualisation is useful for developing our understanding of regional power pools, which have both state and non-state actors, as well as overlapping membership. See Louise Fawcett and Helene Gandois, 'Regionalism in Africa and the Middle East,' *European Integration* 32, no. 6 (2010); Amitav Acharya, 'Global IR and Regional Worlds,' *International Studies Quarterly* 58, no. 4 (2014); Andrew Hurrell, 'Towards the Global Study of IR,' *Revista Brasileira de Política Internacional* 59, no. 2 (2016); Tessa Morris-Suzuki, 'Liquid Area Studies,' *Positions: Asia Critique* 27, no. 1 (2019).

[9] Anton Eberhard and Maria Shkaratan, 'Powering Africa,' *Energy Policy* 42 (2012); Ijeoma Onyeji, Morgan Bazilian, and Patrick Nussbaumer, 'Contextualizing Electricity Access in Sub-Saharan Africa,' *Energy for Sustainable Development* 16, no. 4 (2012); Masami Kojima and Chris Trimble, *Making Power Affordable for Africa and Viable for Its Utilities*, World Bank (Washington DC, 2016).

[10] IRENA, *SAPP: Planning & Prospects for Renewable Energy*, International Renewable Energy Agency (Masdar City, 2013); Antonio Castellano et al., *Brighter Africa* (McKinsey & Company, 2015); Laszlo Bruszt and Stefano Palestini, 'Regional Development Governance,' in *Oxford Handbook of Comparative Regionalism*, ed. Tanja Börzel and Thomas Risse (Oxford: OUP, 2016); Petra Valickova and Nicholas Elms, 'Potential Gains from Regional Integration,' *Energy for Sustainable Development* 62 (2021).

[11] Channing Arndt et al., *The Political Economy of Clean Energy Transitions* (Oxford: OUP, 2017); Channing Arndt et al., 'Faster than You Think,' *Annual Review of Resource Economics* 11 (2019); Bryce McCall et al., *Least-Cost Integrated Resource Planning and Cost-Optimal Climate Change Mitigation Policy*, UNU-WIDER (Helsinki, 2019).

neighbouring states, is a useful way of expanding regional energy trade, integrating transmission grids, and exploiting economies of scale in electrical power.[12]

In short, the 'theoretical business case for power pools is clear and powerful', both for regional powers and their neighbours.[13] Insights from extant literature make a convincing case for the benefits of regional trade integration, which has the potential to improve affordability of electricity, reduce greenhouse gas emissions, improve reliability and security of energy supply, and help countries deal with droughts.[14] A World Bank report on African infrastructure found that returns to cross-border transmission investment could be 20-30% in most power pools, and as high as 120% in the SAPP.[15] Thus, contrary to the often-deterministic undertones accompanying assertions of a 'resource curse' in Africa, the theoretical case for regional power pools suggests Africa could leverage its vast natural resource endowments to develop the transformative electricity generation potential needed for sustainable growth, poverty reduction, foreign investment, and local employment.[16]

[12] Alfonso Medinilla, Bruce Byiers, and Karim Karaki, *African Power Pools* (2019); ibid.; Gaylor Montmasson-Clair and Bhavna Deonarain, 'Regional Integration in Southern Africa,' in *Competition and Regulation for Inclusive Growth in Southern Africa*, ed. Jonathan Klaaren, Simon Roberts, and Imraan Valodia (Auckland Park: Jacana Media, 2019).

[13] Medinilla, Byiers, and Karaki, *African Power Pools*, 6.

[14] Montmasson-Clair and Deonarain, 'Regional Integration in Southern Africa.'; USAID, *Power Africa Transmission Roadmap to 2030*, US Agency for International Development (Washington DC, 2018); IEA, *World Energy Outlook 2019* (Paris: International Energy Agency, 2019); Valickova and Elms, 'Potential Gains from Regional Integration.'

[15] Anton Eberhard et al., *Africa's Power Infrastructure* (Washington DC: World Bank, 2011).

[16] Ibrahim Elbadawi and Nadir Mohammed, 'Natural Resources in Africa,' in *Oxford Handbook of Africa and Economics: Volume 1*, ed. Célestin Monga and Justin Yifu Lin (Oxford: OUP, 2015); José Macuane, Lars Buur, and Celso Monjane, 'Power, Conflict and Natural Resources,' *African Affairs* 117, no. 468 (2018).

In addition, regionalism in sub-Saharan Africa is relatively dynamic and formal institution-building has proliferated.[17] Thus, one would expect states to be inclined towards engaging with regional energy integration, as they have integrated in other parts of the world, such as the EU. However, African states have mostly developed their power sectors in isolation, and the effectiveness of regional power pools around the continent remains limited.[18,19] The performance of regional power pools in sub-Saharan Africa varies significantly, which cannot be explicated solely by supply of infrastructure or generation capacity; indeed, each regional power pool is differently affected by national interests that may advance or constrain regional energy cooperation.[20]

Amongst the reasons presented for the deficiencies in effectiveness of power pools, researchers have highlighted the role of *regional powers* in supporting and enabling regional energy integration. This paper understands a 'regional power' to be a state able to establish some form of domination over regional processes.[21] In some accounts,

[17] Fawcett and Gandois, 'Regionalism in Africa and the Middle East.'; Christof Hartmann, 'Sub-Saharan Africa,' in *Oxford Handbook of Comparative Regionalism*, ed. Tanja Börzel and Thomas Risse (Oxford: OUP, 2016); Tanja Börzel and Thomas Risse, 'Introduction,' ibid.

[18] Medinilla, Byiers, and Karaki, *African Power Pools*.

[19] I conceptualise the degree of regional energy integration according to two categories: the extent of regional infrastructure (generation plants and regional interconnectors built/owned by the power pool), and the extent of institutions and structures that enable the infrastructure to be used for trade in electricity (agreements, operating guidelines, and market structures). See ECA, *The Potential of Regional Power Sector Integration*, Economic Consulting Associates (Washington DC, 2009).

[20] Medinilla, Byiers, and Karaki, *African Power Pools*.

[21] Due to the conceptual and theoretical 'baggage' that accompanies the term 'hegemon', I opt instead to use the term 'regional power'. In neorealist usage, 'hegemony' is often associated with superpowers. See Jan Vanheukelom and Talitha Bertelsmann-Scott, *The Political Economy of Regional Integration in Africa: SADC*, European Centre for Development Policy Management (Maastricht, 2016), iv-v; Chris Brown, *Understanding IR*, 5th ed. (London: Springer, 2019); Baylis, Smith, and Owens, *Globalisation of World Politics*.

regional powers are perceived as facilitators ('champions' of regional integration),[22] whilst others point to their efforts to obstruct integration.[23]

Because there is little doubt that regional powers shape energy cooperation outcomes, the more analytically-interesting question is *how we can explicate* their behaviour and attitudes towards – their *participation*[24] in – regional energy integration. Regional powers rarely act in a uniform manner given their regional dominance and the macroeconomic case for regional power pools; that is, a regional power's position of strength *vis-à-vis* its neighbours does not necessarily lead it to some form of domineering behaviour with regards to regional energy integration.[25]

The role of South Africa, as the regional power in Southern Africa, is a complicated one. Though the state's regional power status is in dispute, it commands significant influence in African affairs and, of the 16 SADC states, definitively has the largest and most sophisticated economy.[26] As the dominant electricity market in the region, much of

[22] See G John Ikenberry and Charles Kupchan, 'Socialisation and Hegemonic Power,' *International Organisation* 44, no. 3 (1990); Sinderpal Singh, *Framing 'South Asia'*, Institute of Defence and Strategic Studies (Singapore, 2001).

[23] See Joseph Grieco, 'Realism and Regionalism,' in *Unipolar Politics*, ed. Ethan Kapstain and Michael Mastanduno (New York: Columbia University Press, 1999). For the importance of regional 'champions', see Medinilla, Byiers, and Karaki, *African Power Pools*.

[24] I understand 'participation' to be bi-dimensional, premised on whether the regional power has the *capacity* to participate in the power pool, and, given such capacity, whether it then *chooses* to participate in the power pool. The extent of participation depends not just on the decisions of the government, but also on those of the (state-owned) power utility.

[25] Barry Buzan and Ole Wæver, *Regions and Powers* (Cambridge: CUP, 2003); Miriam Prys-Hansen, 'Hegemony, Domination, Detachment,' *International Studies Review* 12, no. 4 (2010).

[26] Olusola Ogunnubi and Adeoye Akinola, 'South Africa and the Question of Hegemony in Africa,' *Journal of Developing Societies* 33, no. 4 (2017); James Hamill, *Africa's Lost Leader* (London: Routledge, 2018); Theo Neethling, 'South Africa in a Complex Regional, Continental and Global Order,' in *South African Politics*, ed. Nicola De Jager (Cape Town: OUP, 2020); Mills Soko and Mzukisi Qobo, 'South Africa's Economic Role in Africa,' in *Oxford Handbook of the South African Economy*, ed. Arkebe Oqubay, Fiona Tregenna, and Imraan Valodia (Oxford: OUP, 2021).

the political motivation behind the formation and evolution of the SAPP stemmed from South Africa's historical desire to meet future increases in demand, through the importing of low-cost hydropower from its neighbours, as well as its historical surplus capacity of electricity during the apartheid era.[27,28]

Before the mid-2000s, Eskom was essentially a vehicle for South Africa's expansion into Africa: Eskom Enterprises Africa operated multisectoral subsidiaries around the continent, and by 2002, it was a bidder in 32 tender processes across the continent, and even nine beyond the continent.[29,30] The SAPP, which was able to take advantage of an already-existent grid built by the so-called 'frontline states' (Zambia, Botswana, and Zimbabwe) to decrease their energy imports from apartheid-era South Africa, developed significantly with South Africa's proactive participation.[31]

Whereas in the SAPP's early years, South Africa acted as an exporter of low-cost electricity, since the mid-2000s, the state has faced an electricity crisis,[32] suffering from intermittent 'loadshedding'[33] and becoming an importer of power.[34] Despite the

[27] ECA, *The Potential of Regional Power Sector Integration*; Jan Vanheukelom, *SADC: Living with a Powerful Neighbour*, European Centre for Development Policy Management (Maastricht, 2017).

[28] A comprehensive history of the SAPP is available in Sylvy Jaglin and Alain Dubresson, 'Eskom & Africa,' in *Eskom: Electricity and Technopolitics in South Africa* (Cape Town: UCT Press, 2016).

[29] Ibid.

[30] As per conventions in academic writing, I write numbers in words where they are less than 10, except chapter, section, graphic, phase, or table numbers.

[31] ECA, *The Potential of Regional Power Sector Integration*.

[32] The causes of this domestic energy crisis are complex. For a thorough analysis, see Rod Crompton and Ruwadzano Matsika, 'Energy in South Africa,' in *Oxford Handbook of the South African Economy*, ed. Arkebe Oqubay, Fiona Tregenna, and Imraan Valodia (Oxford: OUP, 2021).

[33] 'Loadshedding' refers to the intentional shutting down of electric power to parts of the state's grid, when the demand is greater than the available supply, to prevent the failure of the entire system.

[34] Jaglin and Dubresson, 'Eskom & Africa.'; Montmasson-Clair and Deonarain, 'Regional Integration in Southern Africa.'

aforementioned macroeconomic case for regional energy integration, the state's response has been to initiate new power generation projects domestically and allow for a degree of private participation (through independent power producers (IPPs) and embedded generation).[35] Consequently, Eskom has narrowed its previously global lens to the SADC and the SAPP, if not solely its immediate neighbours.[36] Though Eskom remains the dominant exporter in the region, the SAPP estimates that, later this decade, South Africa will become a net *importer* of electricity from the grid.[37]

Thus, Pretoria's participation in regional energy integration has been multifaceted. The state was the underlying political and economic force behind the development of the power pool, yet since the mid-2000s has participated minimally in the SAPP, pursuing energy individualism instead. A further complexity is that South Africa only occasionally displays typical 'regional hegemonic'[38] behaviour (for instance, via setting the regional agenda), despite the asymmetric interdependence it enjoys *vis-à-vis* the other SADC states.[39]

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[35] SAPP, *SAPP Annual Report 2015*, Southern African Power Pool (Harare, 2015), http://www.sapp.co.zw/annual-reports.

[36] Jaglin and Dubresson, 'Eskom & Africa.'

[37] SAPP, *SAPP Pool Plan 2017*, Southern African Power Pool (Harare, 2017).

[38] In neoliberal institutionalist literature, 'hegemony' generally refers to a mixed breed of anarchy and hierarchy with high interdependence and institutionalised dominance, whereby regional powers use their bargaining power to obtain outcomes they prefer.

Stephen Krasner, 'Structural Causes and Regime Consequences,' *International Organisation* 36, no. 2 (1982); Arthur Stein, *Why Nations Cooperate* (Ithaca: Cornell University Press, 1990); G John Ikenberry, *After Victory* (Princeton: PUP, 2001).

[39] Neethling, 'South Africa in a Complex Regional, Continental and Global Order.'; Soko and Qobo, 'South Africa's Economic Role in Africa.'

1.2 Contribution

This paper provides contributions to the literature on the politics of energy, the behaviour of regional powers, comparative regionalism, and the GPE of African states.

Firstly, this contribution is a conceptual one. The complex concept of a 'regional power pool', as a regional organisation connecting actors such as national power utilities (NPUs), Ministers of Energy, IPPs, and national energy regulators, has received marginal attention in IR literature, despite its significance as a unidimensional regional cooperation mechanism. GPE literature has remained thematically focused on more traditional interstate trade issues, as well as production, finance, and development.[40] This paper provides rich data on the characteristics of the SAPP, an important regional power pool, and maps its interactions with relevant actors, thus elucidating the concept of a 'regional power pool'.

The same GPE literature has only recently begun to take cognisance of the multi-faceted nature of 'energy', encapsulating aspects as different as physical infrastructure, legal institutions, technology, and market design.[41] In the same vein, nuanced conceptualisations of energy must also consider the broader *social* dimensions of the natural resources providing that energy. While nature creates these substances, it is their use by humans that converts them into resources, meaning that natural resources are

[40] John Ravenhill, 'International Political Economy,' in *Oxford Handbook of International Relations*, ed. Christian Reus-Smit and Duncan Snidal (Oxford: OUP, 2008); Phillips, 'Global Political Economy.'

[41] Caroline Kuzemko, Michael Keating, and Andreas Goldthau, 'Nexus-Thinking in IPE,' in *Handbook of the IPE of Energy and Natural Resources*, ed. Andreas Goldthau, Michael Keating, and Caroline Kuzemko (Cheltenham: Edward Elgar, 2018).

products of joint natural and social processes, influencing social relations that are deeply embedded in power relations.[42] This paper implements a multifaceted conceptualisation of energy, exploring aspects such as regional energy markets, energy policy, energy pricing, natural resource endowments, and energy project financing.

This research aims to develop these concepts in IR literature, and in so doing, expand notions of 'security' beyond their traditional borders. More than just state security, this paper emphasises the importance of energy security, human security, and ecological security too.[43] These critical conceptualisations of security contextualise the relevance of regional energy integration in the domain of global security.

Secondly, this paper makes a theoretical contribution. By addressing the matter of African regional powers' participation in the energy integration projects of their regional power pools, this paper contributes to our theoretical understanding of the conditions under which cooperation may emerge in world politics. I build theory to explicate the political motivations for regional powers' participation in non-binding regional organisations, which may be transferable to other cases with similar characteristics.[44] By combining insights from the fields of comparative regionalism and the GPE of energy, this paper's theory-building nuances our understanding of this topic.

[42] Philippe Le Billon, *Wars of Plunder* (Oxford: OUP, 2014).

[43] Andreas Goldthau, 'A Public Policy Perspective on Global Energy Security,' *International Studies Perspectives* 13, no. 1 (2012); Alexandra Gheciu and William Wohlforth, *Oxford Handbook of International Security* (Oxford: OUP, 2018).

[44] In *Chapter 6*, I suggest a few examples of where my theory may be transferable.

My focus on South Africa and the SAPP specifically is important for IR theory because the deficiency of energy supply in South Africa (and Southern Africa more broadly) makes this case one where there are scarce resources. Mainstream scholarship on energy, regionalism, regional powers, and climate change has focused disproportionately on the West,[45] where energy access is widespread, yet South Africa's participation in the SAPP is an important case for much of the developing world, where energy cooperation occurs in instances of much more limited energy access.

Thus, this contribution aligns itself with the task of bringing the non-West into IR theory. Comparative regionalism, in particular, needs to progress beyond 'EU-centrism'.[46] By deliberately rearticulating historically-marginalised regions in these fields of study, this research resonates with the work of decentring IR,[47] provincialising Europe,[48] postcolonial IR,[49] and Global IR.[50]

Thirdly, this paper provides an empirical contribution, given its relevance to the matter of sustainable development in Africa, and the developing world at large. Energy security, which has been positively linked with increased regional energy integration, is a crucial

[45] Amitav Acharya and Barry Buzan, 'Why Is There No Non-Western IR Theory?,' *International Relations of the Asia-Pacific* 7, no. 3 (2007); Fawcett and Gandois, 'Regionalism in Africa and the Middle East.'; Meghana Nayak and Eric Selbin, *Decentering IR* (London: Zed Books, 2010); Söderbaum, 'Old, New, and Comparative Regionalism.'

[46] Acharya, 'Global IR and Regional Worlds.'

[47] For instance, Nayak and Selbin, *Decentering IR*; Meera Sabaratnam, 'IR in Dialogue… But Can We Change the Subjects?,' *Millennium* 39, no. 3 (2011).

[48] Dipesh Chakrabarty, *Provincialising Europe* (Princeton: PUP, 1992).

[49] For instance, Edward Said, *Orientalism* (Boston: Routledge, 1978); Gayatri Spivak, 'Can the Subaltern Speak?,' in *Marxism and the Interpretation of Culture*, ed. Cary Nelson and Lawrence Grossberg (Basingstoke: Macmillan Education, 1988); Homi Bhabha, *The Location of Culture* (London: Routledge, 2012); Geeta Chowdhry and Sheila Nair, *Power, Postcolonialism and IR* (London: Routledge, 2002).

[50] Acharya, 'Global IR and Regional Worlds.'; Hurrell, 'Towards the Global Study of IR.'

component of broader economic development, as access to modern electricity has been demonstrated to be a necessary condition for embarking on a path of sustainable economic growth.[51] Thus, understanding the conditions needed to improve energy integration (and, in turn, broader economic development) is of the essence, particularly in sub-Saharan Africa. Moreover, such development is increasingly relevant for the global economy: emerging economies in the Global South have accounted for two-thirds of the global gross domestic product in the past 15 years.[52]

Considering the threat of climate change, sustainable development necessarily entails a just energy transition,[53] and the regional powers of Africa are major case studies for this transition due to their high emissions (South Africa is the 14th-largest greenhouse gas emitter in the world).[54] The SADC's green energy transition is a key indicator of the feasibility of cooperation towards decarbonisation and ecological security in the developing world, as a region of high inequality and asymmetric power distribution between the regional power and its neighbours. This is important in world politics at large, as regional powers in Africa like South Africa, Nigeria, and Egypt hold significant sway on the continent, as well as globally, since they often lay claim to being voices of Africa in multilateral forums (e.g. South Africa in BRICS or the G20).[55]

[51] IEA, *Energy Poverty: How to Make Modern Energy Access Universal?*, International Energy Agency (Paris: International Energy Agency, 2010); UNEP, *Atlas of Africa Energy Resources*, UN Environment Programme (Nairobi, Kenya, 2017).

[52] Neethling, 'South Africa in a Complex Regional, Continental and Global Order.'

[53] Such an energy transition entails transitioning the energy sector towards renewable energies, whilst mitigating the structural affects such a transition may have on the economy.

[54] Carbon Brief, 'The Carbon Brief Profile: South Africa,' (2018). https://www.carbonbrief.org/the-carbon-brief-profile-south-africa/.

[55] Neethling, 'South Africa in a Complex Regional, Continental and Global Order.'

Finally, this paper has the potential to contribute to several policy debates. The novel understandings of the political motivations behind a regional power's (non-)participation in its regional power pool, generated from elite and expert in-depth interviews, will be useful for regional and continental policymakers to consider how decision-makers of regional powers perceive regional energy cooperation mechanisms. Continental policies, such as the *Africa Continental Power Systems Master Plan* or the *African Single Electricity Market*, require – likely as a necessary condition – the participation of African regional powers like South Africa, and this paper provides a thick qualitative-interpretive analysis to understand the complex web of factors shaping such participation. Furthermore, the thematic network analysis in this paper untangles a messy set of factors into Global, Organising, and Basic Themes, providing domestic policymakers in South Africa with a clearer picture of the considerations in their decisions to participate in the SAPP, such as the decisions on the allocation of foreign inputs to South Africa's *Integrated Resource Plan*.

1.3 Plan of the Thesis

This paper's structure is aligned with its qualitative-interpretive methodology. To begin, I motivate for the research gaps that the research question addresses, by analysing key IR theories' expectations for the topic, as well as more subject-specific texts' expectations for South Africa and the SAPP specifically (*Chapter 2*).

The next chapter develops this paper's methodology, including its overarching qualitative-interpretive research design, single case study methods, and the primary

methods of data generation and analysis (*Chapter 3*). The subsequent chapter explores the themes generated by the thematic network analysis of the in-depth interview transcripts (*Chapter 4*).

I then discuss the three Global Themes, mapping the interactions between actors relevant to the research question, and finalising my argument in this paper (*Chapter 5*). Finally, I conclude the paper, and discuss my argument in comparative perspective, before closing with some reflections (*Chapter 6*).

Chapter 2: Literature & Theory

Having now introduced the paper, including its research puzzle and contributions, the next task is to distinguish this work from other IR scholarship, by motivating for the research gaps that I seek to fill. Building on the literatures on the GPE of energy and comparative regionalism, I draw on the secondary-source base of this paper to discuss key IR theories' expectations for African regional powers' participation in their regional power pools,[1] as well as more subject-specific, niche texts' expectations for South Africa's participation in the SAPP. Though these sources provide some provisional insights into the research topic, I highlight their mismatches and shortcomings, demonstrating the need for this paper's research.

As elaborated further in *Chapter 3*, the literature and preliminary theorising in this chapter constitute provisional 'hunches' about how the research puzzle in *Chapter 1* could be understood; these partial expectations are then considered and explored through iterative engagement between the theorising and data in *Chapters 4* and *5*.[2] This chapter will demonstrate the insufficient theorising on this paper's research topic, necessitating this abductive logic of inquiry.

[1] For a list of African regional power pools, see Appendix A.

[2] Peregrine Schwartz-Shea and Dvora Yanow, *Interpretive Research Design*, 1st ed. (New York: Routledge, 2012), 36.

2.1 Regionalist and Global Political Economic Literature

I situate the theoretical base for this paper at the intersection of two strands of IR literature, which are particularly useful for providing some theoretical clarity on this paper's research puzzle, namely *comparative regionalism* and the *global political economy of energy* (GPE). The intersection of these two strands – what I call the *global political economy of regional energy integration*[3] – provides a useful literature base for exploring the broader IR theory's expectations, as well as more specific references to South Africa and the SAPP.

Comparative regionalism merges the top-down, state-led process of building formal regional organisations with the bottom-up relations between non-state actors.[4] This literature nuances our understanding of regions, invokes a greater interdisciplinarity in our analysis of regional energy integration, and incorporates the 'constructivist' and 'governance' turns in the study of regionalisms.[5]

The GPE of energy refers to the subject area of energy within the field of GPE. GPE's central focus is the interplay of economics and politics in the global system, as well as the interrelationship between public and private power in the allocation of scarce

[3] The terminology in comparative regionalism is complex, involving terms such as 'regionalism', 'regionalisation', and 'regional integration', each with different meanings. I use the term 'regional energy integration' to encapsulate the full spectrum of processes entailed in comparative regionalism's merging of regionalism and regionalisation, as applicable to the subject area of energy.

[4] Fawcett and Gandois, 'Regionalism in Africa and the Middle East.'; Börzel and Risse, 'Introduction.'; Söderbaum, 'Old, New, and Comparative Regionalism.'

[5] Fawcett and Gandois, 'Regionalism in Africa and the Middle East.'; Acharya, 'Global IR and Regional Worlds.'; Börzel and Risse, 'Introduction.'; Söderbaum, 'Old, New, and Comparative Regionalism.'; Etel Solingen and Joshua Malnight, 'Globalisation, Domestic Politics, and Regionalism,' ibid.

resources.[6] Not only is much of extant energy scholarship grounded in the field of GPE, but also its interdisciplinary engagement with a multiplicity of actors and institutions, blurring the divides between global, regional, and local, makes it a powerful framework to expand the conventional limits of the studies of energy and regionalism.[7] The GPE of energy literature holds important insights into the multi-faceted nature of energy, energy transitions, renewable energy systems, resistance to transitions ('fossil-fuel capitalism'), and global energy governance.[8]

Both the regionalism and GPE theory have strong ties to the neoliberal institutionalist literature, which emphasises cooperation and institutions, positing that actors rationally choose cooperation and collective action to maximise their interests.[9] This literature contextualises regional power pools as regional organisations facilitating rules and norms of cooperation amongst (the NPUs of) member states, providing forums for dialogue and information-sharing that help overcome cooperation problems.[10]

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[6] Jeffrey Frieden and Lisa Martin, 'IPE: Global and Domestic Interactions,' in *Political Science: The State of the Discipline*, ed. Ira Katznelson and Helen V Milner (New York: WW Norton, 2003); John Ravenhill, *Global Political Economy*, 5th ed. (Oxford: OUP, 2017).

[7] Susan Strange, *States and Markets*, 2nd ed. (London: Continuum, 1994); Michael Keating et al., 'Bringing Energy into IPE,' in *Dynamics of Energy Governance in Europe and Russia*, ed. Caroline Kuzemko et al. (Basingstoke: Palgrave Macmillan, 2012); Kuzemko, Keating, and Goldthau, 'Nexus-Thinking in IPE.'

[8] See, for instance, Andreas Goldthau and Jan Martin Witte, 'Back to the Future or Forward to the Past?,' *International Affairs* 85, no. 2 (2009); Goldthau, 'A Public Policy Perspective on Global Energy Security.'; Keating et al., 'Bringing Energy into IPE.'; Caroline Kuzemko, 'Climate Change Benchmarking,' *Review of International Studies* 41, no. 5 (2015); Kuzemko, Keating, and Goldthau, 'Nexus-Thinking in IPE.'

[9] Robert Keohane, *After Hegemony* (Princeton: PUP, 1984); Robert Axelrod and Robert Keohane, 'Achieving Cooperation under Anarchy,' *World Politics* 38, no. 1 (1985); Robert Keohane and Joseph Nye, *Power and Interdependence*, 4th ed. (Boston: Longman, 2012).

[10] Stein, *Why Nations Cooperate*.

Despite this useful theoretical base, there is a relatively small body of literature relevant to the explication of African regional powers' participation in their regional power pools, most of which is confined to policy-focused, small-N comparative research of the African regional power pools.[11] The work within IR scholarship is particularly limited,[12] and most of this literature contains solely secondary source-based research, and only discusses political motivations in passing. Even when this literature does mention political motivations, the works tend to ascribe causal roles to the same few factors, at the expense of taking into account other important factors.

2.2 Key Explications in the Literature

Domestic Energy Supply

The literature on the GPE of regional energy integration suggests that the dominant factor hindering African regional powers' participation in their regional power pools is domestic energy supply deficiencies. Major energy producers are often forced to choose between national energy objectives and regional commercial interests, considering that most countries in African regional power pools face domestic generation supply

[11] For instance, Ekeminiabasi Eyita-Okon, 'Energy Security through Transboundary Cooperation' (Master's Dissertation University of Witwatersrand, 2014); ICA, *Updated Regional Power Status in Africa Power Pools*, Infrastructure Consortium Africa (African Development Bank Secretariat, 2016); Medinilla, Byiers, and Karaki, *African Power Pools*; Babatunde Odetayo and Michael Walsh, 'A Policy Perspective for an Integrated RPP within the AfCFTA,' *Energy Policy* 156, no. C (2021); George Kyriakarakos, 'Harmonising the Electricity Markets in Africa,' *Sustainability* 14, no. 17 (2022).

[12] One of the reasons for this limited body of literature is that the IR literature within both GPE and comparative regionalism remains overwhelmingly concentrated on the West.

deficiencies, and these may be amongst the most significant blockers of regional energy integration.[13]

Whilst this offers useful insights for understanding the research puzzle, there remains a lack of clarity on the political mechanisms whereby domestic generation supply shortfalls result in decreased participation in regional energy integration. This runs counter to the macroeconomic theorising, which would predict that pooling of electricity generation across a diversity of power suppliers may result in *more* reliability of energy access, including for regional powers. Indeed, the literature mainly focuses on the *effects* of the presence of a regional power on regional integration, but cannot adequately account for *why* the regional power behaved in such a way – particularly when a regional power does not behave in a domineering fashion.[14]

Looking at South Africa's domestic energy supply in particular, the texts on the matter[15] make relatively little mention of the SAPP, presumably owing to its relatively small import value for South Africa. Nonetheless, several works make passing reference to the importance of South Africa's domestic energy supply shortfall for hindering the state's participation in the SAPP.[16] Jaglin and Dubresson's book on the political economy

[13] Vanheukelom and Bertelsmann-Scott, *The Political Economy of Regional Integration in Africa: SADC*; Medinilla, Byiers, and Karaki, *African Power Pools*.

[14] Prys-Hansen, 'Hegemony, Domination, Detachment.'

[15] For instance, Anton Eberhard, *The Political Economy of Power Sector Reform in South Africa*, Programme on Energy & Sustainable Development (Stanford, 2004); Jaglin and Dubresson, 'Eskom & Africa.'; Jarrad G Wright and Joanne R Calitz, *Setting Up for the 2020s*, Council for Scientific and Industrial Research (CSIR) (Pretoria, 2020); Crompton and Matsika, 'Energy in South Africa.'

[16] Jaglin and Dubresson, 'Eskom & Africa.'; Vanheukelom and Bertelsmann-Scott, *The Political Economy of Regional Integration in Africa: SADC*; Medinilla, Byiers, and Karaki, *African Power Pools*; Montmasson-Clair and Deonarain, 'Regional Integration in Southern Africa.'

of Eskom's 'technopolitical' regime draws on field surveys from the early 2010s to explore how Eskom's initially continent-wide ambitions were narrowed to SADC, due to a combination of factors, including the domestic electricity supply shortage.[17] However, they dedicate a mere few pages focus on Eskom's role in the SAPP, and most of their sources are external to Eskom (except Eskom's formal documents such as Annual Reports), whereas I conducted both elite and expert interviews *within* Eskom too.

Medinilla, Byiers & Karaki's discussion paper contains a brief section on 'Power Pools and Regional Hegemons', which notes some of the factors affecting South Africa's participation in the SAPP, including (historical) desires to sell surplus energy.[18] Moreover, Vanheukelom and Bertelsmann-Scott identify domestic electricity supply shortages as one of two key political factors (along with short- to mid-term uncertainties in the SAPP grid) driving South Africa's declining participation in the SAPP from the mid-2000s onwards.[19] Their report bears particular significance, as it utilises a similar theoretical framework – namely a combination of regionalism and GPE.[20] Moreover, their report is the only relevant piece of scholarship reviewed that entailed elite and expert in-depth interviews with officials in the regional energy sector.

Nevertheless, each of these works encounter a similar stumbling block when it comes to explicating the *political mechanism* by which South Africa's domestic energy supply

[17] Jaglin and Dubresson, 'Eskom & Africa.'
[18] Medinilla, Byiers, and Karaki, *African Power Pools*, 21-22.
[19] Vanheukelom and Bertelsmann-Scott, *The Political Economy of Regional Integration in Africa: SADC*, 33-34.
[20] Ibid.

crisis led to the state's turn towards national self-sufficiency, despite the macroeconomic expectations to the contrary.

Exploitation of Regional Power Pools for National Interest

The exploitation of regional power pools for regional powers' national interest is another factor that the literature suggests is important to explicate their participation in those power pools. The regional power is expected to assert its supreme position in the region, which, in the face of regional energy cooperation, has often resulted in regional powers exploiting regional integration agendas to pursue national interests, regime consolidation, and intervention strategies.[21]

The main mismatch of this literature is its focus on the interstate level of analysis, which does not properly account for the direct participants in the regional power pools: the energy producers/utilities based within the member states of those power pools.[22] The presence of these public enterprises renders solely state-level analyses inadequate.[23] Other types of non-state actors also play a role, as well as instruments to facilitate infrastructure financing like Special Vehicle Projects and public-private partnerships.[24]

[21] John Mearsheimer, 'China's Unpeaceful Rise,' in *The Realism Reader*, ed. Colin Elman and Michael Jensen (London: Routledge, 2014); Daniel Bach, *Regionalism in Africa* (Routledge, 2015); Sean Woolfrey, *The Political Economy of Regional Integration in Africa: COMESA*, European Centre for Development Policy Management (Maastricht, 2016).

[22] Medinilla, Byiers, and Karaki, *African Power Pools*.

[23] Andrew Barnett, Mike Stockbridge, and William Kingsmill, *Political Economy of Africa's Power Sector*, The Policy Practice (London, 2016).

[24] ICA, *Updated Regional Power Status in Africa Power Pools*.

Studies on South Africa's regional power status, while numerous, but tend to overlook the SAPP, and energy politics more broadly.[25] Instead, such research tends to focus on the interstate level of analysis, comparing South Africa to other regional powers on the continent, or contesting its 'regional hegemonic' status. However, there are a handful of papers that point towards South Africa's intentions to assert its power in the region through the SAPP, in order to leverage its neighbours' energy dependency for its own politico-economic benefit.[26] Such literature asserts that regional cooperation initiatives like the SADC, the SACU, and the SAPP may be considered façades for South African sub-regional economic ambition.[27]

However, none of these texts deal with how broader regionalist ideologies may clash with the national-interest-centred factors they present. Regionalist ideologies such as Pan-Africanism can constitute domestic identities, and in turn, foreign policies, thereby shaping those states' cooperation with regional organisations such as regional power pools.[28]

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[25] For instance, Chris Alden and Mills Soko, 'South Africa's Economic Relations with Africa,' *The Journal of Modern African Studies* 43, no. 3 (2005); Samuel Umezurike, Chux Iwu, and Lucky Asuelime, 'Socio-Economic Implications of South Africa's FDI in Southern African Development,' *Investment Management & Financial Innovations* 13, no. 3 (2016); Ogunnubi and Akinola, 'South Africa and the Question of Hegemony in Africa.'; Michael Thekiso and Jo-Ansie van Wyk, 'The Quest for African Permanent Membership of the UNSC,' in *Nigeria-South Africa Relations and Regional Hegemonic Competence*, ed. Oluwaseun Tella (Switzerland: Springer, 2019); Ikponmwonsa Omoruyi et al., 'Nigeria-South Africa Rivalry in Quest for Regional Power Status,' *Vestnik RUDN. International Relations* 20, no. 1 (2020); Michael Aleyomi, 'Major Constraints for Regional Hegemony,' *Insight on Africa* 14, no. 2 (2021); Soko and Qobo, 'South Africa's Economic Role in Africa.'

[26] Umezurike, Iwu, and Asuelime, 'Socio-Economic Implications of South Africa's FDI in Southern African Development.'; Vanheukelom, *SADC: Living with a Powerful Neighbour*; Medinilla, Byiers, and Karaki, *African Power Pools*.

[27] Umezurike, Iwu, and Asuelime, 'Socio-Economic Implications of South Africa's FDI in Southern African Development.'

[28] Bach, *Regionalism in Africa*.

Globalising of Regional Energy Projects

The globalising of regional energy projects within the continent is highlighted by the literature as a third key factor for explicating the participation of regional powers in their power pools. Generally, globalisation[29] is crucial for understanding regional cooperation on energy in Africa.[30] A key effect of globalisation, embodied in regional power pools, is the liberalisation of domestic energy sectors, but there is limited consensus on how regional powers respond to this.

On one hand, they stand to profit, as the regional power's larger producers (which enjoy economies of scale) may dominate the smaller producers in the less-developed importing countries. On the other hand, regional powers' NPUs – particularly those in states with high levels of corruption/neopatrimonialism – may resist having their monopolistic positions threatened by the increased competition associated with globalisation, resulting in their lobbying to implement more protectionist measures in response to globalisation.[31]

The globalising of regional energy projects is changing the balance of power in regional power pools, with the proliferation of DFIs and MNCs, as well as a

[29] The term 'globalisation' should be treated with caution, due to its common usage as a catch-all phrase that risks historicising and oversimplifying cross-border processes. See Frederick Cooper, 'What is the Concept of Globalisation Good for?,' *African Affairs* 100, no. 399 (2001). I adopt Baylis, Smith and Owens' definition: 'a historical process involving a fundamental shift in the spatial scale of human social organisation that links distant communities and expands the reach of power relations across regions and continents.' See Baylis, Smith, and Owens, *Globalisation of World Politics*, 539.

[30] Fawcett and Gandois, 'Regionalism in Africa and the Middle East.'; Bach, *Regionalism in Africa*; Hartmann, 'Sub-Saharan Africa.'; Solingen and Malnight, 'Globalisation, Domestic Politics, and Regionalism.'

[31] Benedict Clements et al., *Energy Subsidy Reform* (Washington DC: IMF, 2014).

diversification of external actors following the influx of Asian actors into the African energy sector.[32] Foreign influence may be associated with increased foreign aid for energy integration efforts, such as the US Agency for International Development's (USAID) technical support for the WAPP or the World Bank's financing of the interlinking power line between the SAPP and the Eastern Africa Power Pool (EAPP), resulting in regional powers having a vested interest in regional power pools, to obtain greater access to that foreign aid.[33] In more subtle forms of foreign influence, such as neo-colonial foreign policies by former colonial metropoles, regional powers may be coerced into such arrangements (consider, for instance, the regional integration facilitated by the CFA franc zone or the Southern African Customs Union (SACU), as attempts by the former colonial metropoles to re-legitimise colonial arrangements and their vested geopolitical interests in their former colonies).[34]

There is a limited body of regionalist scholarship that focuses more specifically on the globalising of the SADC energy sector, which tends to be significantly more theoretically-grounded than the literature in the previous two explications.[35] Jaglin and Dubresson's aforementioned book, for instance, also notes the growing external influences in the SADC energy sector, including Asian actors, development finance institutions (DFIs), and public-private partnerships with large multinational corporations (MNCs), which is crowding out South Africa's influence as a regional power.[36]

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[32] Jaglin and Dubresson, 'Eskom & Africa.'
[33] USAID, *Power Africa Transmission Roadmap to 2030*.
[34] Bach, *Regionalism in Africa*.
[35] For instance, Vanheukelom and Bertelsmann-Scott, *The Political Economy of Regional Integration in Africa: SADC*; Johannes Muntschick, *The SADC and the EU* (Hampshire: Palgrave Macmillan, 2018); Victoria Nalule, *Energy Poverty and Access Challenges in Sub-Saharan Africa* (Cham: Springer, 2019).
[36] Jaglin and Dubresson, 'Eskom & Africa.'

Muntschick utilises rational institutionalist theory and game theory to analyse the conditions under which regional integration emerges in the SADC, in the face of external influence from the European Union (EU).[37] With regards to infrastructure cooperation around the SAPP, he finds that the presence of a 'regional hegemon' increased intraregional interdependence has had a positive effect on the regional organisation's institutional design, mitigating the asymmetric extra-regional interdependence with the EU.[38] This book is one of such works focused solely on the *effects* of the presence of a regional power, not to mention his overwhelming focus on the EU, at the expense of proper recognition of the influx of Asian actors in the Southern African energy sector.[39]

Traditions of Guarding National Sovereignty

Regional powers' preferences for guarding national sovereignty is the fourth factor that the literature suggests is important to explicate decreases in participation in regional power pools. State survival remains a core motivation for African foreign policy, and often combines with mercantilist logics of national security and protecting domestic energy industries.[40] Across Africa, there exists a widespread ambition for self-sufficiency with respect to electricity generation.[41]

[37] Muntschick, *The SADC and the EU*.
[38] Ibid.
[39] Jaglin and Dubresson, 'Eskom & Africa.'
[40] Christopher Clapham, *Africa and the International System* (Cambridge: CUP, 1996); Kuzemko, Keating, and Goldthau, 'Nexus-Thinking in IPE.'
[41] Hartmann, 'Sub-Saharan Africa.'; Valickova and Elms, 'Potential Gains from Regional Integration.'

This factor rests on the well-established relationship between domestic politics and global cooperation.[42] Nationalist partisan politics and domestic populism may result in less trust between member states of regional power pools, while civil society organisations like trade unions often lobby their governments to protect employment opportunities provided by domestic energy sectors.[43] Consequently, the pooling of power generally may develop only gradually (if at all), as a collection of bilateral agreements and interconnectors, necessarily involving ceding some degree of sovereignty to the power pool.[44]

Conversely, this body of literature does not adequately address the interplay between traditions of national self-sufficiency and regionalist ideologies promoting energy integration. Continental ideational factors like Pan-Africanism can constitute domestic identities, which may counteract traditions of national self-sufficiency. It is noteworthy, however, that the end goal for regionalisms in much of the postcolonial world was not necessarily integration or supranationalism, but rather autonomy and the preservation of state sovereignty.[45]

[42] Helen Milner, *Interests, Institutions, and Information* (Princeton: PUP, 1997); James Fearon, 'Domestic Politics, Foreign Policy, and Theories of IR,' *Annual Review of Political Science* 1, no. 1 (1998); Edward Mansfield, Helen Milner, and B Peter Rosendorff, 'Why Democracies Cooperate More,' *International Organisation* 56, no. 3 (2002); Andrew Moravcsik, 'The New Liberalism,' in *Oxford Handbook of International Relations*, ed. Christian Reus-Smit and Duncan Snidal (Oxford: OUP, 2008).

[43] Vanheukelom, *SADC: Living with a Powerful Neighbour*; World Bank, *Africa's Pulse 17*, World Bank (Washington DC, 2018).

[44] Medinilla, Byiers, and Karaki, *African Power Pools*.

[45] Amitav Acharya, 'Regionalism beyond EU-Centrism,' in *Oxford Handbook of Comparative Regionalism*, ed. Tanja Börzel and Thomas Risse (Oxford: OUP, 2016).

With respect to South Africa and the SAPP specifically, only one paper was identified that suggested the presence of traditions of guarding national sovereignty as an explicating factor for the decrease in the state's participation in its power pool. Medinilla, Byiers & Karaki's discussion paper notes, amongst other the factors affecting South Africa's participation in the SAPP, the lobbying pressures from domestic trade unions, to protect local jobs by implementing protectionist policies. [46]

Opportunities & Constraints of Regional Energy Cooperation

The final key factor explicating African regional powers' participation with their power pools, according to my analysis of the literature, is the set of opportunities and constraints associated with regional energy cooperation mechanisms. Member states' participation in regional power pools tends to depend on the cost and benefit of various available outcomes, as well as the choices of other member states.[47] Institutions such as the secretariats/coordination centres of the power pools can provide information to member states, which facilitates the exchange of expertise and reduces uncertainty and transaction costs; however, member states may still prefer bilateral contracts because they provide guaranteed supply during scarcity events.[48]

Additionally, regional energy regulatory institutions, which often work hand-in-hand with regional power pools, play a significant role in harmonising rules between member

[46] Medinilla, Byiers, and Karaki, *African Power Pools*, 21-22.
[47] Eyita-Okon, 'Energy Security through Transboundary Cooperation.'
[48] Amy Rose, Robert Stoner, and Ignacio Pérez-Arriaga, *Integrating Market and Bilateral Power Trading in the SAPP*, UNU-WIDER (Helsinki, 2016); Umezurike, Iwu, and Asuelime, 'Socio-Economic Implications of South Africa's FDI in Southern African Development.'; Medinilla, Byiers, and Karaki, *African Power Pools*.

states, without which progress in market integration can be obstructed.[49] Such regulatory institutions can act as platforms for facilitating capacity-building, harmonising industry policies, and promoting regional regulatory cooperation between a power pool's member states.[50] Cross-institutional cooperation, such as between the power pool and the regulatory institution, can bolster regional energy integration, but coordination problems and political tensions can also result in competing and/or redundant regional strategies.[51]

Asymmetric interdependence between regional powers and their neighbours may manifest in the form of energy exporters (often regional powers) and energy importers (often their less-developed neighbours). Regional powers' participation in regional power pools may increase with their interest in gaining export revenues from exporting energy to the power pool, but they also risk becoming dependent on said export revenues.[52] The presence of a regional 'champion', to act as a standard-bearer, provide important public goods, and promote unifying ideas, is generally considered a necessary (though insufficient) condition for effective regional cooperation in Africa.[53]

A more specific look at the literature on the opportunities/constraints of the SAPP, and their explication of South Africa's participation therein, opens up several large bodies of literature that make passing mention of the research question. This literature may be

[49] Bruszt and Palestini, 'Regional Development Governance.'
[50] Elijah Sichone, 'Regional Electricity Marketed-Related Regulatory Initiatives' (Windhoek, 2023).
[51] Jaglin and Dubresson, 'Eskom & Africa.'
[52] Medinilla, Byiers, and Karaki, *African Power Pools*.
[53] Fawcett and Gandois, 'Regionalism in Africa and the Middle East.'; Paul Brenton and Barak Hoffman, *Political Economy of Regional Integration in Sub-Saharan Africa* (Washington DC: World Bank, 2013); Vanheukelom and Bertelsmann-Scott, *The Political Economy of Regional Integration in Africa: SADC*.

subdivided into research (1) quantitatively modelling the SAPP's current or potential supply and demand,[54] (2) focusing on regional energy integration in the context of infrastructure and development in (Southern) Africa,[55] and (3) work investigating the feasibility of a transition to renewable energies in the SAPP (and other power pools).[56] This scholarship is dominated by quantitative modelling research, with sparse focus on the *political motivations behind* the relatively shallow regional integration that the SAPP experiences, and on the empirical side, relatively little primary-source data.

Notwithstanding these limitations, a handful of works do address such political motivations. Jaglin and Dubresson, for instance, suggest that clashing mandates amongst overlapping regional organisations in Southern Africa deter South Africa's participation in the SAPP, [57] whilst Vanheukelom and Bertelsmann-Scott identify short- to mid-term

[54] For instance, Randall Spalding-Fecher et al., 'Electricity Supply and Demand Scenarios for the SAPP,' *Energy Policy* 101 (2017); Philipp Trotter, Roy Maconachie, and Marcelle McManus, 'The Impact of Political Objectives on Optimal Electricity Generation and Transmission in the SAPP,' *Journal of Energy in Southern Africa* 28, no. 3 (2017); Jarrad Wright and John Van Coller, 'System Adequacy in the SAPP,' ibid.29, no. 4 (2018); Valickova and Elms, 'Potential Gains from Regional Integration.'

[55] For instance, WEC, *Regional Energy Integration in Africa*, World Energy Council (London, 2005); Eberhard et al., *Africa's Power Infrastructure*; George Kararach, *Development Policy in Africa* (New York: Palgrave Macmillan, 2014); Montmasson-Clair and Deonarain, 'Regional Integration in Southern Africa.'

[56] For instance, IRENA, *SAPP: Planning & Prospects for Renewable Energy*; Nawfal Saadi, Asami Miketa, and Mark Howells, 'African Clean Energy Corridor,' *Energy Research & Social Science* 5 (2015); Elijah Sichone, 'Exploiting Renewable Energy Opportunities through Integrated Regional Power Systems' (Master's Dissertation Stellenbosch University, 2018); Randall Spalding-Fecher, Brian Joyce, and Harald Winkler, 'Climate Change and Hydropower in the SAPP and Zambezi River Basin,' *Energy Policy* 103 (2017); Dudu Hadebe et al., 'Scaling Up Renewables through Regional Planning and Coordination of Power Systems in Africa,' *Current Sustainable/Renewable Energy Reports* 5, no. 4 (2018); Daniel Russo and Asami Miketa, 'Benefits, Challenges, and Analytical Approaches to Scaling Up Renewables Through Regional Planning and Coordination of Power Systems in Africa,' ibid.6, no. 1 (2019).

[57] Jaglin and Dubresson, 'Eskom & Africa.'

uncertainties in the SAPP grid as the other of two key political factors driving South Africa's declining participation in the SAPP from the mid-2000s onwards.[58]

Two papers point to the opportunities for energy supply from significant regional energy projects (for instance, the Inga Dams in the DRC) as alluring South Africa's participation in the SAPP, particularly to promote dialogue between the member states, which may in turn secure regional electricity transmission from such projects.[59]

2.3 Preliminary Theorising

My analysis of the literature in the secondary-source base of this paper demonstrates that there are five key explications for African regional powers' participation in their regional power pools: the regional powers' domestic energy supply, their exploitation of the power pools for their national interests, the globalising of regional energy projects, traditions of guarding national sovereignty, and the opportunities/constraints associated with regional energy cooperation. However, the bodies of literature making these arguments face a number of limitations, including oversimplification of the political dynamics shaping the decision-making, narrow confinement to the interstate level of analysis, too much emphasis on the *effects* of the presence of a regional power (as opposed to *why* that state participates at all), limited consensus on how regional powers respond to the globalising of energy projects, neglect of the role of ideational factors like regional

[58] Vanheukelom and Bertelsmann-Scott, *The Political Economy of Regional Integration in Africa: SADC*, 33-34.

[59] Eyita-Okon, 'Energy Security through Transboundary Cooperation.'; Medinilla, Byiers, and Karaki, *African Power Pools*, 21-22.

identities, and a lack clarity on the political mechanisms whereby domestic generation supply shortfalls result in decreased participation in regional energy integration.

Looking more specifically at South Africa's participation in the SAPP, each of the five explications have some literature making passing reference to their relevance for South Africa and the SAPP, but to varying extents. Most of the papers pointed towards the importance of South Africa's domestic energy supply shortfall for explicating the state's decrease in participation in the SAPP from the late 2000s. However, several sources also suggested South Africa's participation remains present owing to its intentions to exploit the regional energy cooperation agenda to advance its own national interests in the region. Its regional dominance may be crowded out, though, by the increasing presence of external actors in the SADC energy sector.

The explication of traditions of guarding national sovereignty found little support with specific reference to South Africa's participation in the SAPP. However, the opportunities/constraints associated with regional energy cooperation mechanisms had a handful of varied applications: clashing mandates amongst overlapping regional organisations in Southern Africa and short- to mid-term uncertainties in the SAPP grid were identified as hindrances to South Africa's participation, but its participation was boosted with the state's interests in securing access to significant regional energy projects.

Generally speaking, however, the relevant texts reviewed make just passing reference to this paper's research topic, and the scholarship lacks the theoretically-grounded, primary source-based methodological rigour needed to establish political motivations.

Moreover, the subject-specific texts focused on South Africa's participation in the SAPP tend to demonstrate similar shortcomings to the broader IR theory. In particular, even when the texts discuss the political motivations for South Africa's participation in the SAPP, the works tend to ascribe causal roles to the same few factors, at the expense of taking into account other important factors.

There is a need for 'thick' qualitative research that engages decision-makers on the political dynamics explicating South Africa's participation in the SAPP, and recognises the full complexity of the actors and interactions shaping the decision-making. Deductive research would be infeasible, as there is insufficient theorising on this topic to produce testable hypotheses, which motivates my choice of an abductive logic of inquiry. *Chapter 3* demonstrates that this approach is ideal for generating explications on events that lack sufficient theorisation in contemporary academic discourses.

Chapter 3: Methodology

The previous chapter provided the literature and preliminary theorising to situate the thematic network analysis. I now develop the overarching qualitative-interpretive research design, and then outline the single case study methods, discussing why I chose to analyse the Southern African Power Pool and its respective regional power, South Africa. Thereafter, I expound on the primary method of data generation – in-depth, semi-structured interviews – and finally the primary method of data analysis – thematic network analysis.

3.1 Qualitative-Interpretive Research Design

The qualitative-interpretive methodology for this research is located within the 'heterodox' or 'reflectivist' group of approaches to GPE, that is, the more critical and normative approaches, which are more open to the roles of ideas, identity, and values than more orthodox approaches.[1] Such research is more relativistic, emphasising processes and complexity rather than causality; conclusions should be considered 'plausibilities', as opposed to scientific truths.[2] This paper's interpretive style of research focuses on meaning-making and aims at theory-building, not variables-based hypothesis-testing.[3]

[1] Robert Cox, 'Social Forces, States and World Orders,' *Millennium* 10, no. 2 (1981); Ravenhill, *Global Political Economy*; Ravenhill, 'International Political Economy.'; Stéphane Paquin, *Theories of IPE* (Oxford: OUP, 2021).

[2] Robert Cox, 'The Point Is Not Just to Explain the World but to Change It,' in *Oxford Handbook of International Relations*, ed. Christian Reus-Smit and Duncan Snidal (Oxford: OUP, 2008).

[3] Keith Archer and Loleen Berdahl, *Explorations* (Toronto: OUP, 2011); Schwartz-Shea and Yanow, *Interpretive Research Design*; Xymena Kurowska and Berit Bliesemann de Guevara, 'Interpretive Approaches in Political Science and IR,' in *Sage Handbook of Research Methods in Political Science and International Relations*, ed. Luigi Curini and Robert Franzese (London: Sage, 2020).

This methodology is within the hermeneutical tradition[4] of interpretive work, which posits the value of 'situated agency' that reflects the contextual construction of the subject and their interaction with the world, with a mediating (rather than determining) role of theory.[5] Such interpretivists conceive of research as an intersubjective, meaning-focused process that itself interacts with the studied world.[6] This paper's aim is constitutive inference[7], not causal inference, and its focus is on transferability and specificity, not generalisability – 'thick', single-case analysis that navigates through different structures of meaning.[8]

My logic of inquiry is *abductive*[9] in nature, and thus occupies a middle-ground between inductive and deductive methodologies: this paper allows for the role of theoretical influences in the process of data generation, but does not test theories brought into the local environment.[10] Theory is the 'scaffolding' that guides dialogue with the participants, but that is not to assume its completeness or primacy; consequently, this

[4] Rather than the poststructuralist tradition of interpretive work.

[5] Mark Bevir and RAW Rhodes, 'Defending Interpretation,' *European Political Science* 5, no. 1 (2006).

[6] Cecelia Lynch, *Interpreting International Politics* (New York: Routledge, 2014).

[7] Constitutive theory emphasises mutual constitution, eschews ahistorical and transcendental explanation, and engages how people conceive of their worlds and the language they use to describe it, which shape the interactions they pursue. Schwartz-Shea and Yanow, *Interpretive Research Design*; Baylis, Smith, and Owens, *Globalisation of World Politics*.

[8] Kurowska and Bliesemann de Guevara, 'Interpretive Approaches in Political Science and IR.'

[9] Though the abductive logic of inquiry is sometimes associated with grounded theory analysis, there are various different methods that involve abductivism, and thus this paper's methods should not be conflated with grounded theory analysis.

[10] Komalsingh Rambaree, 'Abductive Thematic Network Analysis (ATNA) Using ATLAS-ti,' in *Innovative Research Methodologies in Management: Volume 1*, ed. Luiz Moutinho and Sokele Mladen (Cham: Springer Nature, 2018); Kurowska and Bliesemann de Guevara, 'Interpretive Approaches in Political Science and IR.'

paper arrives at theoretical arguments via a non-linear, iterative back-and-forth between the theoretical framework and the data.[11]

The abductive logic of inquiry is well-suited to the hermeneutical interpretive practice of knowledge generation in general,[12] and it is also ideally suited to this paper's specific research topic. Firstly, abduction relies on the process of 'explication', which, unlike explanation (which accounts for why something exists or occurs), seeks to 'assess the meaning and significance of phenomena', to 'gain knowledge about their stakes or implications'.[13] The research question therefore deliberately asks how South Africa's participation in the SAPP can be *explicated*. Secondly, as demonstrated in *Chapter 2*, there is a lack of available evidence and theorisation on the research question, and abductivism is ideal for such instances, as it is focused on generating new concepts and explications on events that lack theorisation in current discourses.[14] Thirdly, by having a combination of data-driven and theory-driven research, the rigour of the analysis can be improved through increased reflexivity on biases,[15] which is useful for researching the co-constitutive relationships between the Global Themes that emerge in *Chapter 4*.[16] Finally, abductivism and explication are rooted in the notion that 'theory is provisional,

[11] Michael Burawoy, 'The Extended Case Method,' *Sociological Theory* 16, no. 1 (1998); Nicholas Onuf, *World of Our Making*, 1st ed. (London: Routledge, 2012); Mark Bevir and RAW Rhodes, 'Interpretive Political Science,' in *Routledge Handbook of Interpretive Political Science*, ed. Mark Bevir and RAW Rhodes (London: Routledge, 2016).

[12] Schwartz-Shea and Yanow, *Interpretive Research Design*; Lynch, *Interpreting International Politics*; Chris Ansell, 'Pragmatist Interpretivism,' in *Routledge Handbook of Interpretive Political Science*, ed. Mark Bevir and RAW Rhodes (London: Routledge, 2016); Kurowska and Bliesemann de Guevara, 'Interpretive Approaches in Political Science and IR.'

[13] Lynch, *Interpreting International Politics*, 21.

[14] Onuf, *World of Our Making*; Lynch, *Interpreting International Politics*; Rambaree, 'Abductive Thematic Network Analysis (ATNA) Using ATLAS-ti.'

[15] Rambaree, 'Abductive Thematic Network Analysis (ATNA) Using ATLAS-ti.'

[16] Interpretive work emphasises expanded notions of causality (beyond monocausality), including co-constitution, multi-causality, and contingency. See Lynch, *Interpreting International Politics*.

tentative, and in need of confirmation',[17] thus situating this work within a broader research project that should continue to investigate this topic, as discussed in *Chapter 6*.

The structure of this paper aligns with this abductive, interpretive methodology, which emphasises that the expectations that drive research can be only *partially* spelt out prior to the data generation.[18] That is, *Chapter 2*'s literature and preliminary theorising constitute provisional 'hunches' about how the research puzzle could be understood; they are subjected to confirmation or refutation in an iterative fashion 'in the field' (during the data generation and analysis).[19] This is necessary because of the insufficient theorising on the research question in the extant literature, making *deductive* research infeasible. At the same time, this is not purely *inductive* research, as I am motivated by a research puzzle and research question based in the theoretical literature, and my research design is iteratively informed by preliminary theorising.[20] Accordingly, the research literature is used to inform my prior knowledge about the issues relating to the research question, towards developing context-specific, situated theory.[21]

Reflexivity is of the essence throughout the research process, and refers to the 'injunction continually to reassess and reflect on one's positionality in IR scholarship'.[22] Power dynamics, such as those created by my status as an English-speaking researcher from an elite institution, influence both the data generation and analysis. Therefore, I take

[17] Ibid.; Rambaree, 'Abductive Thematic Network Analysis (ATNA) Using ATLAS-ti.'
[18] Schwartz-Shea and Yanow, *Interpretive Research Design*.
[19] Ibid., 36.
[20] Ibid.
[21] Ibid.
[22] Cecelia Lynch, 'International Relations,' in *Routledge Handbook of Interpretive Political Science*, ed. Mark Bevir and RAW Rhodes (London: Routledge, 2016).

numerous steps to implement reflexivity and account for my positionality in this research, whether in its foundational stages (for instance, a consideration in the casing process was selecting a region in which I have situational access and existing research relationships), the fieldwork (for instance, in-person interviews), or the analysis (for instance, intentional reflexivity at multiple points in the thematic network analysis).

Finally, this research has a normative aim: to promote equity and social justice through access to affordable energy from regional renewable energy infrastructure. This is in sync with the heterodox GPE framework, which emphasises denaturalising dominant forms of power and challenging the prevailing order.[23] I hope to do this by theorising a better understanding of the politico-economic conditions under which regional powers participate in regional energy integration. Moreover, this paper intentionally rearticulates the experience of Africa in this field of study, in pursuit of correcting the methodological nationalism and Eurocentrism in mainstream IR theory.[24]

3.2 Single Case Study Methods

The case-study method is well-established in IR scholarship, with high conceptual validity and in-depth analysis of the complexity of contextual matters.[25] Whereas

[23] Cox, 'Social Forces, States and World Orders.'; Lynch, 'International Relations.'

[24] To this end, I am inspired by works such as Chowdhry and Nair, *Power, Postcolonialism and IR*; Sabaratnam, 'IR in Dialogue… But Can We Change the Subjects?.'; Acharya, 'Global IR and Regional Worlds.'

[25] Alexander George and Andrew Bennett, *Case Studies and Theory Development in the Social Sciences* (Cambridge: MIT Press, 2005); John Gerring, *Case Study Research* (Cambridge: CUP, 2006); Chiara Ruffa, 'Case Study Methods,' in *Sage Handbook of Research Methods in Political Science and International Relations*, ed. Luigi Curini and Robert Franzese (London: Sage, 2020).

positivist case-study methods purport to be generalisable to a larger population of cases, the ability to observe causality and generalisability is questioned in interpretivist studies.[26] Rather, I make contextual use of cases, aiming for the 'thick' analysis of a single case, which may in turn build transferable theory.[27] This paper probes deeply into a single case study, whilst also reflecting more generally on regional energy integration and its wider significance, both to IR and world politics.

Casing

In contrast to 'case selection', non-positivist case studies involve 'casing', which emphasises the constructed nature of cases.[28] The choice of case is premised on the research puzzle, intrinsic importance (theoretical/empirical significance), potential for transferability of the theory to other cases with similar characteristics, and situational access (practical considerations and existing knowledge about the case).[29] Additionally, *Chapter 1* confirmed the intention to bring the non-West into IR theory, and thus this normative purpose guides the casing too.

The overarching choice of Africa as the continent of focus is entrenched in these casing goals. On the one hand, Africa is of strategic and intrinsic importance for the research question. While European countries trade cross-border electricity most extensively of any region in the world (9.1% of total electricity supplied in 2018), the second-highest is

[26] Ruffa, 'Case Study Methods.'; Virginia Braun and Victoria Clarke, *Thematic Analysis* (London: Sage, 2021).
[27] Kurowska and Bliesemann de Guevara, 'Interpretive Approaches in Political Science and IR.'
[28] Ibid.
[29] Gerring, *Case Study Research*; Ruffa, 'Case Study Methods.'

Africa, at 4.5% of total electricity supplied.[30] Moreover, Africa is home to more natural resource-rich states than any other region in the world, with more than 15 states classified as 'resource-rich developing countries'.[31] Nonetheless, access to electricity in sub-Saharan Africa is the lowest of any world region; as mentioned in *Chapter 1*, more than half the region's population remains without power.[32] Lastly, as a South African who has spent most of my academic career thus far studying the international relations of Africa, I am in a strong position to leverage existing research and political relationships on the continent.

To inform the casing within the continent, I compiled a table of the five African regional power pools, comparing their founding year, mandate, membership, capacity, and influence of regional powers (see Appendix A).[33] Bearing in mind that the interest is in understanding why regional powers participate in their regional power pools, a historical 'champion' of regional energy integration (the highest level of participation) would be a strategic casing choice, particularly if there has been a change in the behaviour of that 'champion' towards the power pool. The casing should be of intrinsic importance, particularly empirically in terms of energy access. However, it would still be important to explore a regional power pool that is functional, to the extent that the macroeconomic case for regional energy integration could be assumed to hold. Lastly, the regional power

[30] IEA, *Electricity Market Report*, International Energy Agency (Paris, 2020).

[31] International Monetary Fund, 2012, cited in Elbadawi and Mohammed, 'Natural Resources in Africa.'

[32] UNCTAD, *Commodities at a Glance*.

[33] This table is an important contribution of this paper, not only for contextualising the casing process, but also for analysing the transferability of this research to other African regional power pools, which will be discussed in *Chapter 6*.

Note 1: Angola, Burundi, the DRC, Libya, and Tanzania are members of more than one power pool.

Note 2: The SAPP and the EAPP are linked via a power line between Kenya, Zambia, and Tanzania.

pool and regional power should be situationally accessible, ideally with existing research relationships.

Based on these criteria, I argue that the SAPP, with its historical regional 'champion', South Africa, is an important case for this paper. The SAPP is the first and most functional power pool in Africa; it is the only African power pool with a competitive regional energy market, with more than triple the supply capacity of the WAPP.[34,35] In Southern Africa, sub-Saharan Africa's most coherent and integrated region, energy integration has been high on the political agenda, with numerous strategies in place at the SADC level.[36] Southern Africa has an abundance of energy resources, yet around 40% of its inhabitants do not have access to electricity.[37]

Regional energy integration in Southern Africa has remained limited, with a weak level of electricity interconnection, and clear preferences for energy security individualism (or bilateral agreements) instead of regional cooperation.[38] The amount of power exchanged in the region equates to just under 2% of the system load of the member states of the SAPP.[39] Furthermore, the region does not fully utilise the available transfer

[34] Medinilla, Byiers, and Karaki, *African Power Pools*; SAPP, 'SAPP Official Website,' (2022). https://www.sapp.co.zw.

[35] This would make the SAPP the regional power pool with the highest potential added value in Africa (in terms of energy availability).

[36] Eberhard et al., *Africa's Power Infrastructure*; Montmasson-Clair and Deonarain, 'Regional Integration in Southern Africa.'; Neethling, 'South Africa in a Complex Regional, Continental and Global Order.'

[37] Hadebe et al., 'Scaling Up Renewables through Regional Planning and Coordination of Power Systems in Africa.'

[38] Hartmann, 'Sub-Saharan Africa.'; Medinilla, Byiers, and Karaki, *African Power Pools*; Montmasson-Clair and Deonarain, 'Regional Integration in Southern Africa.'; Valickova and Elms, 'Potential Gains from Regional Integration.'

[39] SAPP, *SAPP Annual Report 2019*, Southern African Power Pool (Harare, 2019), http://www.sapp.co.zw/annual-reports.

capacity for the regional trade of electricity, suggesting that barriers to integration are not solely linked to the capacity of the SAPP interconnectors.[40]

South Africa is the regional economic powerhouse of the SADC, and widely considered the gateway into Africa and the voice of the continent in multilateral forums.[41] Since the dawn of its democracy, South Africa has claimed to shape its domestic and foreign policy decisions according to an 'African Agenda', positioning itself as a champion of multilateralism.[42] Yet, incidents of xenophobic violence, failures to act as a defender of human rights in the continent, intermittent domineering policy in the SADC, and historical distrust of the state due to its dominant position, have all undermined South Africa's reputation as a continental leader.[43] Additionally, as mentioned in *Chapter 1*, the state experienced loadshedding almost half of the calendar year in 2022.[44]

Though its 'regional hegemonic' status is in dispute, the state was the underlying political and economic force behind the development of the SAPP, but in the mid-2000s began decreasing its participation in the SAPP and pursuing energy individualism instead.[45] It is this pivot, from the highest level of participation in the SAPP to relative non-participation (despite the macroeconomic case for regional energy integration), that

[40] Valickova and Elms, 'Potential Gains from Regional Integration.'
[41] Neethling, 'South Africa in a Complex Regional, Continental and Global Order.'
[42] Soko and Qobo, 'South Africa's Economic Role in Africa.'
[43] Hamill, *Africa's Lost Leader*; Neethling, 'South Africa in a Complex Regional, Continental and Global Order.'; Soko and Qobo, 'South Africa's Economic Role in Africa.'
[44] CSIR, *Statistics of Utility-Scale Power Generation in South Africa 2022*.
[45] ECA, *The Potential of Regional Power Sector Integration*; SAPP, *SAPP Annual Report 2015*; Ogunnubi and Akinola, 'South Africa and the Question of Hegemony in Africa.'

makes South Africa, and its regional power pool, the SAPP, an important single case to investigate the research question.

An Overview of the SAPP

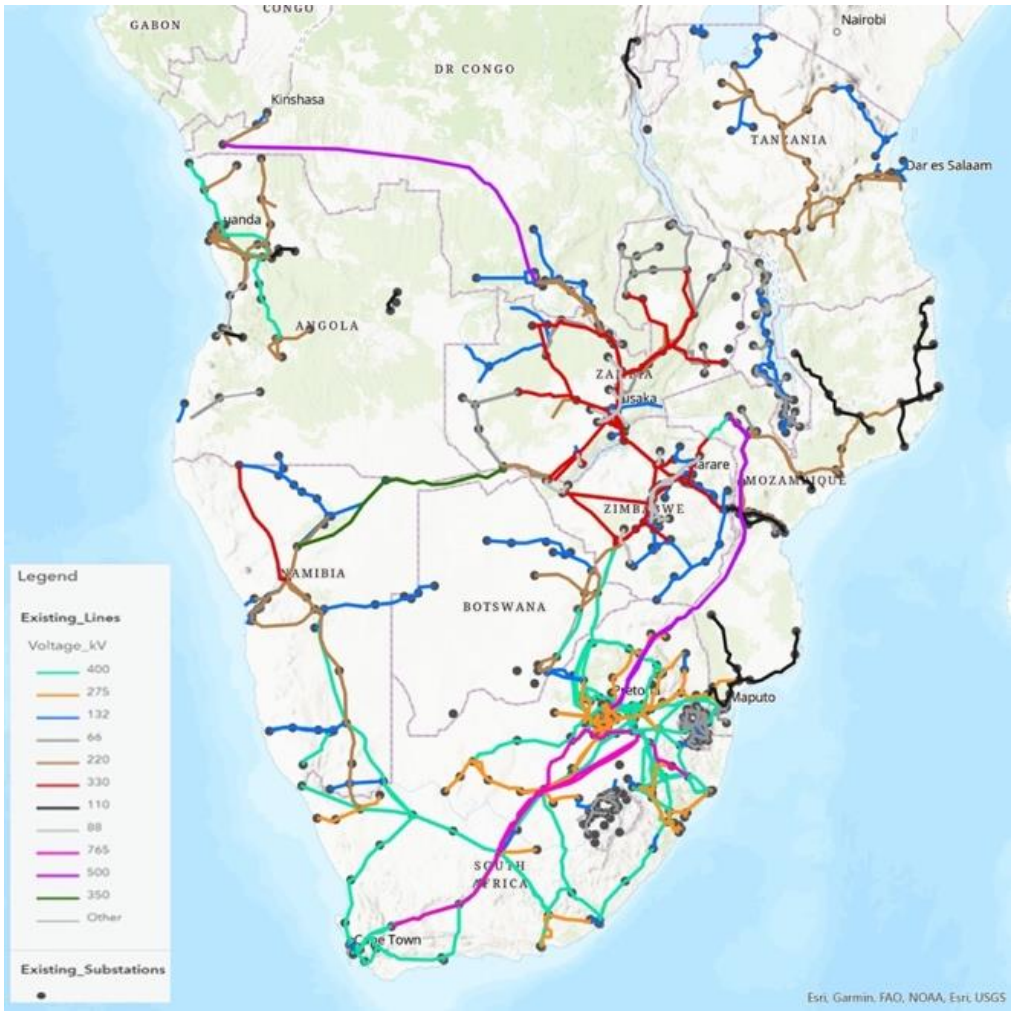
The focal point of this paper is South Africa's interaction with the SAPP, a SADC-based regional cooperation initiative[46] that serves as the Southern African sub-region's regional power pool. The SAPP envisions the formation of a 'fully integrated, competitive energy market', providing 'sustainable energy solutions for the SADC region and beyond'.[47] Its 18-strong membership, tabulated in Appendix B, comprises 12 of the 16 SADC member states, represented by their respective national power utilities (NPUs), as well as five operating members (IPPs or independent transmission companies of significant involvement in the grid) and one market participant (which solely trades on the SAPP markets).[48]

The cross-border transmission infrastructure, depicted in the SAPP grid map in *Figure 1* below, interconnects a generation mix that is dominated by coal (62%, owing to South Africa's contribution of the vast majority of the supply), as well as 21% from hydropower, and the remainder from renewables or distillate.[49] Appendix C tabulates the demand from and supply to the SAPP grid, which boasts net 7,823MW excess generation capacity, once reserves (required to guarantee system reliability) and non-operating members (those not

[46] For a comprehensive overview of SADC regional energy cooperation initiatives, see Montmasson-Clair and Deonarain, 'Regional Integration in Southern Africa.'
[47] SAPP, 'SAPP Official Website.'
[48] Stephen Dihwa, 'Integration of Renewables in SAPP' (Harare, 2022).
[49] Nalule, *Energy Poverty and Access Challenges in Sub-Saharan Africa*; Mziyanda Mbuseli, 'Southern African Power Pool' (Harare, 2022).

interconnected to the grid) are taken into account.[50] This number does not factor in plant breakdowns and planned maintenance, which must be tracked real-time; South Africa's operating capacity is at any one point significantly lower than the stated operational capacity.[51]

Figure 1: SAPP Grid Map (as of April 2022)[52]



[50] SAPP, *SAPP Annual Report 2021*, Southern African Power Pool (Harare, 2021), http://www.sapp.co.zw/annual-reports.

[51] Montmasson-Clair and Deonarain, 'Regional Integration in Southern Africa.'

[52] SAPP, 'SAPP Official Website.'

Temporal & Geographic Scope

I delimit the temporal scope of this research to the period from 2001 until April 2022. Though the SAPP was founded in 1995, it was only in 2001 that its 'Short-Term Energy Market' was implemented, at which point it became a regional energy market in practice.[53] At this point, I can reasonably assume that the macroeconomic case for regional energy integration mentioned in *Chapter 1* would likely hold. April 2022 is the month in which the SAPP's newest market, the 'Balancing Market', was implemented; the significant milestone serves as a useful temporal cap on this project, which is necessary given the ongoing rapid developments in the South African energy sector.[54] Setting this temporal scope does not preclude references to historical factors in this research, which are essential for understanding the aforementioned 'situated agency' of the interview participants.

The geographic scope of this paper is, strictly speaking, the Southern African sub-region, as physically demarcated by the 16 SADC member states' borders. However, as noted in *Chapter 1*, comparative regionalism conceptualises of regions as fluid, socially-constructed spaces; indeed, the divides between local, regional, and global are increasingly blurred in Africa, and this analysis must necessarily factor in global actors and transnational forces.[55]

[53] Mbuseli, 'Southern African Power Pool.'
[54] Ibid.
[55] Bach, *Regionalism in Africa*.

Actors

The actors relevant to this research project stretch across the 'global public domain'.[56] A provisional list[57] of some significant actors for analysing South Africa's participation in the SAPP includes:

- The South African government, especially the Department of Mineral Resources and Energy (DMRE),
- Eskom, South Africa's state-owned electricity utility, which plays a significant role in the state's choice to participate in the SAPP,[58]
- The SAPP Executive Committee, Coordination Centre (SAPP-CC), and Project Advisory Unit (SAPP-PAU),
- The SADC Council of Ministers and Directorate of Infrastructure,
- The other SADC governments and their NPUs,
- Private power producers and transmission companies across Southern Africa,
- The Regional Energy Regulators Association of Southern Africa (RERA) and its constituent national energy regulators (particularly the National Energy Regulator of South Africa (NERSA)),
- African Regional Economic Communities (RECs) and their regional power pools,
- The African Union (AU) (especially its Development Agency – the New Partnership for Africa's Development (AUDA-NEPAD)),

[56] John Ruggie, 'Reconstituting the Global Public Domain,' *European Journal of International Relations* 10, no. 4 (2004).

[57] This list is provisional because, as per the abductive methodology, the analysis is generated by an iterative back-and-forth between the theory and data. Whilst the actors listed here are sourced from the theory, *Chapter 5* draws on the data to map out the interactions between a more comprehensive set of actors relevant to the research question.

[58] Medinilla, Byiers, and Karaki, *African Power Pools*.

- MNCs,
- Development Finance Institutions (DFIs) (especially the Development Bank of Southern Africa (DBSA), which is wholly owned by the South African state), and
- The official development assistance (ODA) or foreign direct investment (FDI) donors (especially states and non-state actors from Asia, the EU, and the US).

3.3 Data Generation: In-Depth Interviewing

I conducted 22 semi-structured, in-depth interviews, to explore the political motivations for South Africa's participation in the SAPP. In-depth interviews are crucial devices for interrogating motivations due to their ability to provide rich data and reveal unobservables through direct interaction with participants.[59] As stated by Rathbun:

> 'Interviewing, despite its flaws, is often the best tool for establishing how subjective factors influence political decision-making, the motivations of those involved, and the role of agency in events of interest'.[60]

Elite interviewing is particularly important for this thesis, as it is one of the most useful methods for establishing political motivations.[61] I adopt Harvey's definition of 'elites' as those who occupy senior management and board-level positions within organisations or government departments.[62] Interviews with such individuals can shed light on hidden

[59] Herbert Rubin and Irene Rubin, *Qualitative Interviewing*, 2nd ed. (California: Sage, 2005); Diana Kapiszewski, Lauren MacLean, and Benjamin Read, *Field Research in Political Science* (Cambridge: CUP, 2015); Lee Fujii, *Interviewing in Social Science Research* (New York: Routledge, 2017).

[60] Brian Rathbun, 'Interviewing and Qualitative Field Methods,' in *Oxford Handbook of Political Methodology*, ed. Janet Box-Steffensmeier, Henry Brady, and David Collier (Oxford: OUP, 2008), 686.

[61] Oisín Tansey, 'Process Tracing and Elite Interviewing,' *PS: Political Science & Politics* 40, no. 4 (2007).

[62] William Harvey, 'Strategies for Conducting Elite Interviews,' *Qualitative Research* 11, no. 4 (2011).

elements of political action that an analysis of political outcomes or other primary sources would not normally reveal.[63]

Amongst the limitations of interviewing, King, Keohane and Verba emphasise the potential for participants' 'incorrect' answers – whether due to dishonesty, strategic reconstruction, contingency, ignorance, or memory lapses.[64] Though often overstated, the concern about 'inaccurate' answers – intentional or unintentional – is real, and the interpretation of participants' responses must accordingly weigh the theorising,[65] the public record, conflicting evidence from other interviews, and my own instincts from non-verbal indicators during the interviews.[66]

The reversal of typical power asymmetries in elite interviews, involving senior public figures who often have vested interests in how they represent themselves, will make these concerns even more significant. My counter-measures include appearing knowledgeable in the interviews (conveying my expertise and using relevant jargon), iteratively comparing interpretations with the theorising, and 'norming', which entails asking preliminary questions unrelated to the subject to gauge general ideological approaches, allowing me to discount certain aspects of testimonies.[67]

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[63] Tansey, 'Process Tracing and Elite Interviewing.'

[64] Gary King, Robert Keohane, and Sidney Verba, *Designing Social Inquiry*, New ed. (Princeton: PUP, 2021), 112.

[65] The preliminary theorising in *Chapter 2* plays an important (but not overriding) role in guiding the evaluation of the 'accuracy' of the participants' responses.

[66] Rubin and Rubin, *Qualitative Interviewing*; Rathbun, 'Interviewing and Qualitative Field Methods.'

[67] Beth Leech, 'Asking Questions,' *PS: Political Science & Politics* 35, no. 4 (2002); Rubin and Rubin, *Qualitative Interviewing*.

In pursuit of understanding political motivations for policy, the inclusion criteria for the interview participants aimed for various public sector officials in either the South African energy sector, or the SADC's regional energy integration projects, as well as public and private sector experts/academics familiar with the topic. I excluded decision-makers prior to 1995, the year of the founding of the SAPP, and also excluded Ministers or Members of Parliament, due to the high likelihood of strategically-reconstructed responses (given the tumultuous political climate in the South African energy sector).

As Patton notes, 'there are no rules for sample size in qualitative inquiry', and thus I set out to conduct a sufficient but practically-reasonable number of interviews to understand the political motivations: at least five elite interviews, and at least 15 expert interviews.[68] Given the need to interview regional and global officials, I utilised virtual interviews in most cases, due to practical and financial constraints on travel. Though virtual interviews are often considered 'second-best' to in-person interviews (due to the difficulty of building rapport and interpreting non-verbal signals), they foster access to political elites, as well as those with personal/situational constraints on their availability.[69] Since the start of the COVID-19 pandemic, the use of virtual calling software has become common, which would elucidate why many of the participants indicated preference for virtual interviews even when in-person was practically possible.[70] For security of data, I utilised Microsoft Teams, the University of Oxford's approved software for digital interviews.

[68] Michael Patton, *Qualitative Research & Evaluation Methods*, 4th ed. (California: Sage, 2014), 244.
[69] Lauren Konken, 'Online Qualitative Research Methods' (paper presented at the Qualitative Methods in Political Science Guest Lecture, Oxford, 2022).
[70] Ibid.

The anonymised list of the interview participants is tabulated in Appendix D. From 10th January to 1st February 2023 (with one outlier rescheduled to 17th February), I conducted 22 semi-structured, in-depth interviews. The interviews lasted an average of 49 minutes, with a minimum length of 29 minutes and a maximum length of 105 minutes. Of the 22 interviews, seven were elite interviews[71] and 15 were expert interviews. The vast majority – 19 of 22 – occurred online, with three in-person in South Africa. All the elite participants were from either South African government/Eskom or relevant regional organisations, while the expert interviews stretched across a wide range of public- and private sector organisations/departments/companies, providing a rich diversity of views on the research question.

I used a recruitment strategy combination of snowball-sampling, extant personal connections, and 'cold emailing' using contact details available online.[72] The vast majority (18 of 22) of participants were successfully initially contacted via email; two were contacted via phone call and another two via LinkedIn 'connect' requests with interview request messages. I received research ethics approval from the Department of Politics & IR's Departmental Research Ethics Committee (see Appendix F).[73,74]

[71] As per Harvey's aforementioned conceptualisation of 'elite'.

[72] See Appendix E for the Participant Recruitment Email Template, which emphasised my university affiliation/researcher status, and contained a professional email signature.

[73] I conducted fieldwork risk-assessment as per the University's guidelines and best practices (see next footnote). Various guidelines and policies are available from the University of Oxford's Safety Office, Research Services, and Central University Research Ethics Committee (CUREC). External guidelines also include those from Universities UK and the UK's Economic and Social Research Council (ESRC).

[74] All participants were sent a Participant Information Sheet in advance of their interviews (See Appendix G), and all participants had the project verbally re-explained to them at the start of the interview (as per the 'Verbal Consent' section of the Interview Topic Guide in Appendix H), prior to asking for consent.

All participants consented[75] to being anonymously interviewed and having notes taken during the interview, while 20 out of 22 participants consented to audio recording of the interview. Interview details were stored on an anonymised interview record spreadsheet, and all 20 audio-recorded interviews were manually transcribed and had direct identifiers in those transcriptions removed. The anonymised spreadsheet and transcriptions were stored securely on Microsoft OneDrive, the University's approved secure cloud.[76]

The interview topic guide (see Appendix H) is informed by the method of semi-structured interviewing, whereby the interviewer adapts the questions list as the interview proceeds, allow for the possibility of the interviewer playing a greater role in the knowledge-producing process.[77] This is in line with the constructivist theoretical framework for interviewing, whereby interviews entail the co-construction of knowledge between interviewer and participant.[78] Accordingly, this topic guide served as a template adapted to the unique role played by each participant; this aided in separating fact from opinion, and allowed interviews to build on one another.[79]

Starting with a brief introduction (emphasising the participant's value for the research), the topic guide observes the 'interview curve', moving from initially more

[75] I understand this process as one of gaining *informed* consent, where participants enter research voluntarily with full information about what it means for them to take part, and that they give consent *before* they enter the research.

[76] Participants' data was stored in line with the UK's *Data Protection Act 2018* and the University of Oxford's *Data Protection Policy*.

[77] Victoria Clarke and Virginia Braun, *Successful Qualitative Research* (London: Sage, 2013), 117; Steinar Kvale and Svend Brinkmann, *InterViews*, 2nd ed. (London: Sage, 2009).

[78] Jonathan Moses and Torbjørn Knutsen, *Ways of Knowing* (London: Macmillan Education, 2012); Kapiszewski, MacLean, and Read, *Field Research in Political Science*.

[79] Leech, 'Asking Questions.'; Rathbun, 'Interviewing and Qualitative Field Methods.'

general questions, to questions more specific to my research question, before then 'cooling down' the interview with broader closing questions.[80] Throughout the interview, I wrote 'field notes', time-referencing key statements and noting 'meta-data' – non-verbal signs and emotions (and later added these as annotations in *NVivo*).[81] Though this paper's temporal scope is from 2001 to April 2022, and I confine my analysis to events within this window, I did not explicitly delimit participants' contributions during the interviews, to avoid discouraging participants from speaking freely.

The semi-structured interview methods may have entailed sub-conscious steering of interview conversations in the directions of my interests.[82] This is simultaneously a benefit and a risk of this semi-structured technique – the ability to target questions I would like answered.[83] The constructivist methodology emphasises the subjective nature of the interview itself, as a vehicle for revealing constructed representations.[84] My response was to continually reflect, in memos after each interview and during the analysis, about the influence of my biases and positionality in the construction of this research.

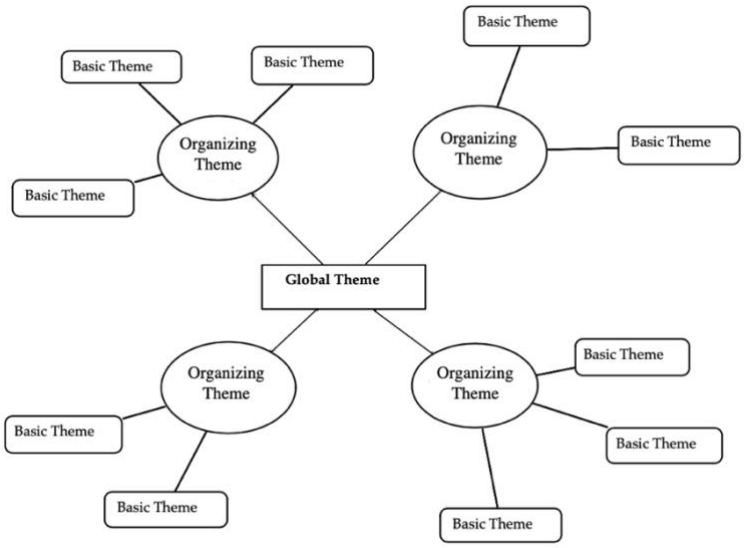
3.4 Data Analysis: Thematic Network Analysis

Thematic analysis is a well-established type of qualitative data analysis for the purpose of uncovering understandings and perceptions.[85] Though there are many ways of doing a

[80] Leech, 'Asking Questions.'; Clarke and Braun, *Successful Qualitative Research*.
[81] Rathbun, 'Interviewing and Qualitative Field Methods.'
[82] Interpretive methodology emphasises the conditioning and positionality of the researcher in articulating some types of questions and not others. See Lynch, *Interpreting International Politics*.
[83] Rathbun, 'Interviewing and Qualitative Field Methods.'
[84] Kapiszewski, MacLean, and Read, *Field Research in Political Science*.
[85] Jennifer Attride-Stirling, 'Thematic Networks,' *Qualitative Research* 1, no. 3 (2001).

thematic analysis, which broadly entails a process of reading, categorising, synthesising and interpreting data in textual form, I argue that interpretive research generally needs more systemisation and disclosure of the *process* of interpretation. I thus opt for a codebook approach to thematic analysis: *thematic network analysis*.[86] Whilst sharing key features of any hermeneutic analysis, thematic network analysis assists in systematising the interpretation process, through the use of *thematic networks*: web-like illustrations that summarise the main themes constituting a set of texts.[87] These thematic networks can be graphically represented in non-hierarchical, web-like maps that illustrate the relationships between the themes, as in *Figure 2*. In *Chapter 4*, I use thematic network analysis to generate three Global Themes. The discussion of these three Global Themes, in *Chapter 5*, generates my argument in this paper.

Figure 2: The Structure of a Thematic Network[88,89]



[86] Ibid.; Braun and Clarke, *Thematic Analysis*.
[87] Attride-Stirling, 'Thematic Networks.'; Braun and Clarke, *Thematic Analysis*.
[88] Attride-Stirling, 'Thematic Networks,' 388.
[89] This graphic includes Basic Themes, as per Attride-Stirling's original paper; my analysis is significantly more complex and thus my thematic networks only display Organising and Global Themes.

Thematic network analysis is a flexible method of qualitative data analysis that can be data-driven or theory-driven, or some combination of the two.[90] Therefore, it is possible to apply an abductive logic of inquiry to the method.[91] My thematic network analysis is foundationally based on Attride-Stirling's method, a well-established method in the literature. I adapt her method, which may be considered more *deductive* in its logic of inquiry, towards my abductive methodology by removing the initial deductive step in her process (the construction of a theory-driven 'coding framework')[92], and instead incorporate several *inductive* steps from Braun and Clarke's reflexive thematic analysis.[93]

The resulting process by which I carried out this thematic network analysis of my interview transcripts is tabulated in Appendix I, which outlines the task associated with each phase. The theme-refining process is necessarily iterative and pattern-finding, involving reading and re-reading, in consultation with the research puzzle and theorising, to uncover motivations for cooperation with regional energy integration initiatives.[94] Importantly, the codebook and thematic networks are not the *purpose* of the analysis, merely tools to *facilitate* the analysis.[95]

[90] Komalsingh Rambaree and Elisabeth Faxelid, 'Considering Abductive Thematic Analysis with ATLAS.ti 6.2,' in *Advancing Research Methods with New Media Technologies*, ed. Natalie Sappleton (Pennsylvania: IGI, 2013).
[91] Rambaree, 'Abductive Thematic Network Analysis (ATNA) Using ATLAS-ti.'
[92] Attride-Stirling, 'Thematic Networks.'
[93] Braun and Clarke, *Thematic Analysis*.
[94] Audrey Alejandro, 'Coding Qualitative Data,' (2020). https://www.audreyalejandro.com/blog---the-methodological-artist/category/coding; Kurowska and Bliesemann de Guevara, 'Interpretive Approaches in Political Science and IR.'
[95] Braun and Clarke, *Thematic Analysis*.

I use a Qualitative Data Analysis Software package, *NVivo 1.6.2*, to assist the thematic network analysis. I use *NVivo* solely as a tool to increase the effectiveness of my interpretive data analysis; it does not supplant any of the actual interpretation, but merely manages the significant amount of textual data produced by the 22 interviews.[96] The use of *NVivo* in qualitative research has sometimes been criticised, for reasons such as distancing researchers from their data, 'coding fetishism', or mechanising analyses in a more positivist sense.[97] However, I am only using *NVivo* insofar as it supports my methods of analysis; it does not substitute for interpretation, theory, or reflexivity.[98] Nevertheless, I take steps to mitigate any risk of mechanising the interpretation process, including hand-coding transcripts first (during the data familiarisation stage), and avoiding using *NVivo* tools that mechanise the actual interpretation process (for instance, the 'Autocode' feature). The *NVivo* tools I use at each phase of my thematic network analysis are listed in the final column of Appendix I.

The initial phase of process of data familiarisation involves the hand-coding mentioned above – writing up preliminary notes in 'memos' linked to the transcripts in *NVivo*, and annotating the transcripts with hand-written notes taken during the interviews, including non-verbal 'meta-data' such as body language, emotions, and hesitations. I then move to open coding of the interview transcripts,[99] to generate 'codes' – phrases representing

[96] Patricia Bazeley and Kristi Jackson, *Qualitative Data Analysis with NVivo*, 2nd ed. (California: Sage, 2013); Braun and Clarke, *Thematic Analysis*.
[97] Bazeley and Jackson, *Qualitative Data Analysis with NVivo*.
[98] Ibid.; Braun and Clarke, *Thematic Analysis*.
[99] For two of the interviews, the participants requested that I do not audio-record, and thus there are no transcripts from those interviews. However, I was permitted to take notes during both of those interviews, and so their contributions will still feature in my analysis, as codes based off my notes of their responses.

segments of the interview transcripts interpreted as relevant for the analysis.[100] Grouping codes together according to common or salient content generates the initial themes, *Basic Themes* – lower-order premises evident in the text, which I then review with the actual transcripts to check for consistency.[101]

Throughout this process, reflexivity is essential – particularly regarding my biases and those of my interview participants. Phase 4 of the analysis entails writing up analytical reflexive memos – reflections on the knowledge-construction process involved in generating the Basic Themes.[102]

At this point, I can finally construct the thematic networks, by arranging the Basic Themes into similar groupings to generate *Organising Themes* – middle-order themes summarising the principal assumptions evident in the transcripts.[103] Ultimately, clusters of Organising Themes then constitute the *Global Themes* – super-ordinate themes encompassing the principal metaphors in the data as a whole.[104] This phase involves writing up memos specifically dedicated to identifying linkages between themes.

The usage of *NVivo* allows me to track how frequently certain 'files' (interview transcripts) and 'references' (quotes from the transcripts) emerge within each Basic, Organising, and Global Theme. Though this is not a quantitative study, that does not preclude numerical analysis of the data, as a rough estimator of the frequency by which

[100] Attride-Stirling, 'Thematic Networks.'
[101] Ibid.
[102] Rambaree and Faxelid, 'Considering Abductive Thematic Analysis with ATLAS.ti 6.2.'
[103] Attride-Stirling, 'Thematic Networks.'
[104] Ibid., 388-89.

themes emerge. Both qualitative and quantitative analytic techniques can be used in qualitative-interpretive analysis, so long as the overarching research design remains aligned with the methodology.[105] The numerical data are treated with caution: a higher frequency does not necessarily confer more significance to that topic *vis-à-vis* the research question, and rigorous interpretation of the text may confirm or refute numerical frequencies.

The themes do not constitute 'analysis' in and of themselves; subsequently, I must explore the underlying patterns regarding the research question. This discussion of the overall picture generates my argument in this paper.

[105] Greg Guest, Kathleen MacQueen, and Emily Namey, *Applied Thematic Analysis* (California: Sage, 2011).

Chapter 4: Analysis

The previous chapter detailed the methodology for this paper, the implementation of which this empirical chapter explores. By way of reminder, the thematic network analysis is answering this paper's research question, *how can South Africa's participation in the SAPP's energy integration projects be explicated?* At this stage, the 22 in-depth interviews – listed in the anonymised interview record in Appendix D – have been conducted, their transcripts[1] and 'field notes' have been typed up[2], and I have completed Phases 1-5 of the thematic network analysis (see Appendix I).

Phase 2, the *systematic data coding*, entailed the open coding of the transcripts in *NVivo*. Drawing on the memos and annotations, I generated my codes, with a total of 509 transcript quotes[3] referenced across these codes. These codes were then abstracted into initial themes, based on common/salient content, in Phase 3, *generation of themes*. These initial themes were reviewed and refined in Phase 4, *reviewing of themes*, by comparing them with actual text in the transcripts, culminating in 162 Basic Themes.

The Basic Themes, along with descriptions of the issues discussed in each theme, cumulatively constitute the 'codebook' of the analysis, contained in Appendix J. The left

[1] As noted in *Chapter 3*, two of the participants requested no audio-recording, and thus there are no transcripts for their interviews; I relied on notes taken during the interviews for their input to the analysis.

[2] None of the interview participants contacted me post-interview to withdraw their consent to use their data for my analysis; thus, all interview transcripts and notes are available for interpretation.

[3] Selected quotes will be provided in my upcoming discussions, which have been edited for ease of read and interpretation. This involves deleting repeated words and adding contextualising words/phrases in square brackets.

column contains all 162 Basic Themes generated from the transcripts, which have been arranged according to the 20 Organising Themes they generated (in the right column), as well as a description of the issues discussed (in the central column). In a handful of instances, Basic Themes featured in more than one Organising Theme.

These 20 Organising Themes emerging from the codebook are the foundations for Phase 5, *construction of the thematic networks*. The 20 Organising Themes are arranged into similar, coherent clusters, which generate the three final Global Themes. The final output from this process is contained in *Table 1* below. In the left column, the 20 Organising Themes are listed, and have been arranged into clusters according to the Global Themes that they constitute (which are in bold in the right column). The two middle columns contain the number of files (interview transcripts[4]) in which transcript quotes[5] constituting the Organising Themes feature, and the total number of transcript quotes referenced across those files. For instance, for the Organising Theme *Political Willpower for Regional Cooperation*, which has been categorised as part of the *Regional Political Dynamics* Global Theme, a total of 56 quotes related to this Organising Theme feature across 15 of the interview transcripts.

[4] For the two participants for whom there are no interview transcripts, their 'files' are the typed versions of my hand-written notes from their interviews.

[5] As mentioned above, the transcript quotes were initially interpreted to generate the codes, which in turn were clustered to generate the themes.

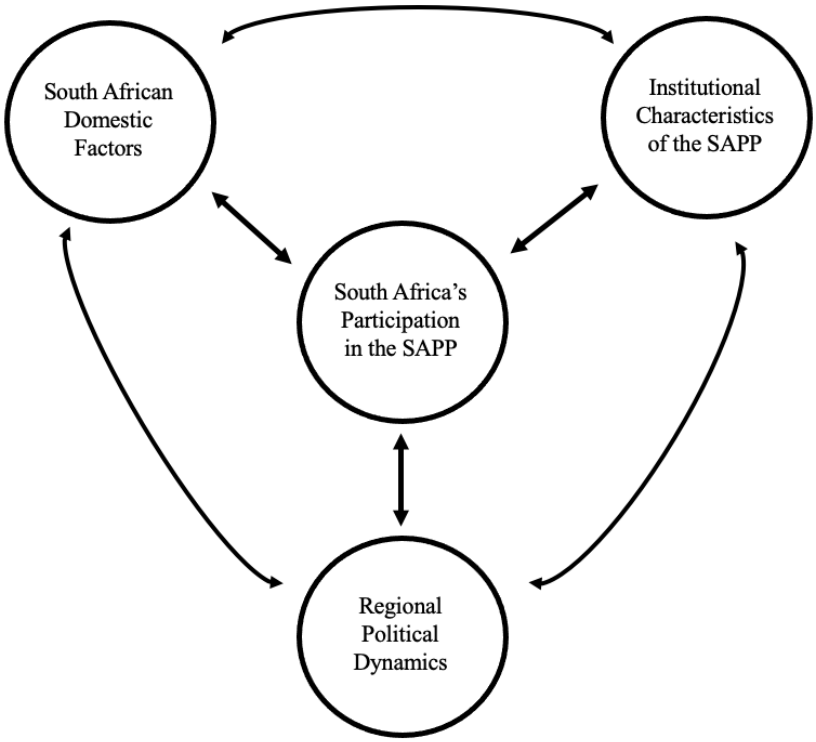
Table 1: From Organising Themes to Global Themes

Organising Theme	*Files*	*References*	*Global Theme*
	20	**237**	**Regional Political Dynamics**
Political willpower for regional cooperation	15	56	
Regional project financing and complexity	17	54	
Lack of neighbouring states' energy supply and transmission infrastructure	16	36	
Regional geography, endowments, and projects	16	27	
Regional politico-economic instability	12	24	
South Africa's regional dominance and leadership	10	23	
Foreign relations and foreign influence	5	11	
Mindsets of national self-sufficiency and guarding sovereignty	5	6	
	18	**150**	**South African Domestic Factors**
Domestic and foreign energy policies	11	43	
Energy transition (and resistance thereto)	12	38	
Lack of domestic generation availability	10	25	
Public sector mismanagement, corruption, and neo-patrimonialism	9	25	
Underpriced electricity	4	10	
Focus on domestic infrastructure investment	6	9	
	19	**122**	**Institutional Characteristics of the SAPP**
Commercial rationale of power pools	13	40	
Diversification of energy mix and location	13	40	
Institutionalisation and regulation of cross-border energy trade	6	21	
Private sector participation	5	10	
Project support and security	3	7	
Interconnection with the rest of Africa	4	4	

These three Global Themes are represented diagrammatically in *Figure 3* below, as a network around the core focus of this paper: South Africa's participation in the SAPP. A Global Theme is like a claim, in that it groups sets of Organising Themes together to present an argument.[6] The further discussion of these Global Themes (in Chapter 5) generates my first argument in this paper:

> *South Africa's participation in the SAPP can be explicated as a complex web of interactions between three interconnected groups of factors: regional political dynamics in Southern Africa, South African domestic factors, and the institutional characteristics of the SAPP.*

Figure 3: The Global Themes



[6] Attride-Stirling, 'Thematic Networks.'

The methodology for this paper is one emphasising processes and complexity rather than causality. Therefore, these Global Themes are intended to organise the 'thick' analysis of this single case study, by clustering the Organising Themes and their constituent Basic Themes and quotes, which are the actual richness of the data. In the same vein, the Global Themes should not be considered mutually-exclusive, separate categories, but rather overlapping and interlinked groups of factors, which together are important for understanding the political motivations behind South Africa's participation in the SAPP.

The Global Themes are co-constitutive: domestic factors in South Africa inform its energy policy in the region (and thus regional political dynamics); regional political dynamics (which themselves are linked to global ones) influence domestic factors in South Africa, and the institutional characteristics of the SAPP influence and are influenced by both the regional political dynamics and the domestic factors in South Africa. This is line with the conceptualisation of regions as fluid, socially-constructed spaces, where the divides between local, regional, and global are blurred.

The 'files' and 'references' columns of *Table 1* represent important data for consideration.[7] These data can be interpreted to convey several important points about the themes. Firstly, the Global Themes are largely representative of the content[8] of all the participants' interview transcripts. This is indicated by each of the Global Themes covering between 18 and 20 of the 22 interview participants' files. This provides a level

[7] See discussion in *Chapter 3* regarding the use of numerical analysis to describe qualitative data.
[8] That is, the content relevant to the research question.

of assurance that the coverage of the Organising Themes encompasses themes across the vast majority of participants' interviews.[9]

Secondly, the number of references for each Organising and Global Theme provide an idea of how frequently those themes emerged during the interviews. This paper's semi-structured interview technique allows flexibility in terms of the topic guide for the interviews. Thus, I probed into subject areas (relevant to the research question) that participants emphasised during the interviews, and this would reflect in the frequency of references for themes. A higher frequency does not necessarily confer more significance for that topic *vis-à-vis* the research question; contrarily, it may be that participants' specialisations or interests skewed their responses towards those topics. Thus, the interpretation of the transcripts in the analysis and discussion may confirm or refute the numerical description of the frequencies.

Nonetheless, I argue that there remains some value in considering the number of references for the Organising and Global Themes, as a rough estimator for how prevalent those themes were in participants' responses. This task may be visualised by a hierarchy chart of the Organising and Global Themes, which I created using *NVivo* and which has been inserted in Appendix K. This hierarchy chart, a 'treemap', displays the themes hierarchically by the number of references in *Table 1*. Each rectangle in the chart has an area proportional to the number of references constituting that theme, relative to the total

[9] This is not to say that the interview participant sample is representative of any broader population, nor does it confer some sense of generalisability to these discussions. Conversely, this is an assurance that each of the Global Themes interpreted from the interview transcripts/notes represent the vast majority of the interview participants in this study.

number of references across all themes. The Organising Themes are illustrated as sub-rectangles of the colour-coded Global Themes' rectangles.[10]

The foremost impression from this chart, confirmed by *Table 1*, is the dominant frequency with which themes related to the *Regional Political Dynamics* Global Theme emerged. Such themes emerged almost double as often as those of the *Institutional Characteristics of the SAPP* Global Theme, and more than 50% as often as the *South African Domestic Factors* Global Theme. The latter two Global Themes emerged with a somewhat similar frequency.

The next interpretation of these data is the frequency by which individual Organising Themes arose. *Table 2* below ranks the 10 most-frequently-referenced Organising Themes. Again, this is a crude measure that should only be considered a rough estimator for the prevalence of themes. Nevertheless, *Table 2* suggests that the below-mentioned themes are amongst the most important for understanding South Africa's participation in the SAPP.

[10] The usefulness of this hierarchy chart is limited, as the themes are in many cases overlapping and co-constitutive. However, this chart still provides some analytical use for providing a rough estimator of the frequency by which themes emerged during the interviews.

Table 2: Most-Frequently-Referenced Organising Themes

Organising Theme	*References*
Political willpower for regional cooperation	56
Regional project financing and complexity	54
Domestic and foreign energy policies	43
Diversification of energy mix and location	40
Commercial rationale of power pools	40
Energy transition (and resistance thereto)	38
Lack of neighbouring states' energy supply/transmission infrastructure	36
Regional geography, endowments, and projects	27
Public sector mismanagement, corruption, and neo-patrimonialism	25
Lack of domestic generation availability	25

These considerations will be revisited in *Chapter 5*. For now, I illustrate each of the three thematic networks, centred on each of their respective Global Themes. I explore their Organising Themes[11], as per Phase 6 of the analysis. These themes were generated with an iterative back-and-forth process between the theorising and the data; thus, I make relevant comparisons with the preliminary theorising from *Chapter 2*. Throughout, I selectively reference quotes from the interview participants to illustrate the data.[12]

4.1 Regional Political Dynamics

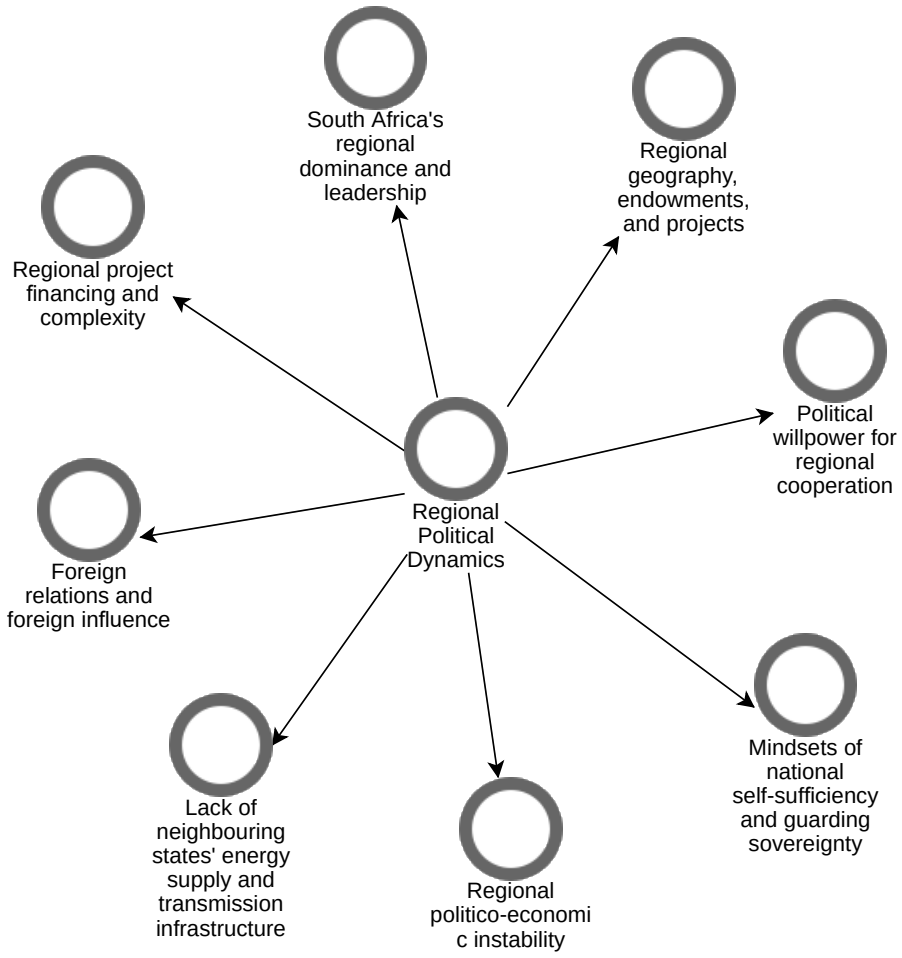
The first of the three Global Themes, *Regional Political Dynamics*, conveys the importance of Southern Africa's regional politics for understanding South Africa's participation in energy integration projects of the SAPP. This Global Theme is the core

[11] Organising Themes are discussed in the same order as *Table 1*, i.e., ascending order of number of references.

[12] Due to the large volume of footnoting involved in this referencing of quotes, this chapter will differ from the others in that footnote numbering will restart for each section of the chapter.

of a thematic network of eight constituent Organising Themes. This thematic network is depicted below in *Figure 4*.

Figure 4: Thematic Network for Regional Political Dynamics[1]



Political Willpower for Regional Cooperation

The most frequently-referenced Organising Theme for understanding South Africa's participation in the SAPP is Southern African governments' political will to cooperate

[1] As with the Global Themes, the various Organising Themes should be considered co-constitutive. This is not depicted in the diagrams of the thematic networks, to avoid congesting the diagrams.

with the SAPP's energy integration projects, which in turn affects South Africa's participation. The theorising in *Chapter 2* noted that states' contributions to regional power pools depend on the cost and benefit of the various available outcomes, and the choices of the other member states.[2] Such willpower is necessary for the kind of projects the SAPP pursues, particularly considering that cross-border transmission projects require the consent of each member state, when the power may not be (solely) distributed to their citizens:

> 'To be able to build a transmission line across three or four different political ends is going to be so complicated.'[3]
> 'These [projects] are still very big and then involve power being transported across multiple countries.'[4]

Furthermore, large amounts of power transmitted over long distances (such as from the Inga Dams in the DRC to South Africa) would likely require High-Voltage Direct Current (HVDC) transmission lines, for which 'the technology is not available to tap off into different countries' along the way.[5] This matter was a hindrance in recent intergovernmental discussions, reported an executive official at the SAPP.[6] Participants suggested that a compromise would be the construction of a 'normal 400kV [Alternating Current] line [from which power can be distributed] alongside the [HV]DC line'.[7]

Generally, participants asserted that the regional political willpower is not sufficient for such complex, multinational projects:

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[2] Eyita-Okon, 'Energy Security through Transboundary Cooperation.'
[3] Participant A
[4] Participant M
[5] Participants A and C
[6] Participant N
[7] Quote from Participant E; Participant N confirmed such a compromise is in discussion at the regional inter-governmental level.

> 'I think it's the problem of having the political will and the political robustness to deploy that money in the right places'.[8]
> 'That's why South Africa and many other countries in the region have not [integrated] - that political and policy will is lacking'.[9]

Some of the participants argued that this lack of willpower was the result of a weak REC in Southern Africa: the SADC. A research project conducted by the RERA found that, 'in terms of regional economic communities [in Africa], SADC had the weakest link or foundation'.[10] Indeed, a former executive official from Eskom commented on their experience of the SADC meetings:

> 'It goes back to the issue of political will. We talk, talk, talk, and do absolutely nothing… The whole idea was that you will get the SADC Energy Ministers together, and they would make things happen, but so many people - very competent people - that were involved in Southern African Power Pool just left because nothing else has happened.'[11]

On the contrary, the SADC Energy Ministers have on at least one occasion displayed this political will, even with resistance from their own utilities:

> 'The utilities used to resist any other members coming in [to the SAPP] because they saw themselves as the drivers of this [regional] integration. But one of the interesting things is that the drive to get private sector involved actually came from the SADC Energy Ministers.'[12]
> 'The Ministers of Energy met and they just gave a directive [to allow private actors to participate in the SAPP market] to SAPP utilities'[13]

Furthermore, one of the participants argued that the political will does exist, but that financing is the most significant hurdle:

> 'There's definitely a lot of support and I wouldn't say the issue of political will [is the main problem]… the main issue is really finding the financing to build these [transmission] lines'.[14]

[8] Participant F
[9] Participant I
[10] Participant I
[11] Participant V
[12] Participant N
[13] Participant G
[14] Participant J

Another senior official from Eskom recalled from their meetings in the SAPP that 'in partnership with existing [SADC] countries… every country is open to that [working with South Africa on their power projects]'.[15] This suggests that the problem of willpower may be more pronounced for the regional power, South Africa.

Others noted that such regional projects generally require 'a certain amount of political bravery',[16] a 'really enterprising political entrepreneur',[17] a 'kind of intuition, that kind of gut'[18]. Such political bravery is not just a shot in the dark: previous energy projects, such as the long transmission lines to power the aluminium smelters in Mozambique and South Africa, have been strategically planned in their locations (such as 'an obvious industrial hub'), and resulted in significant development in those locations, due to the 'huge amounts of secondary trade' accompanying them.[19] In fact, this was previously 'Eskom's philosophy': 'build it and they will come'.[20] One participant even referenced a 'school of thought in economics that says, build the infrastructure, and the business will come'.[21]

Regional Project Financing & Complexity

Of a similar frequency of references in the interviews is how the complications of the financing and organisation of regional energy projects affect South Africa's participation in the SAPP. Numerous participants confirmed that project development is 'very, very

[15] Participant A
[16] Participant H
[17] Participant F
[18] Participant A
[19] Participant C
[20] Participant C
[21] Participant A

complex. And very costly.'[22] In the SAPP, this is exacerbated by the fact that 'most of the utilities in Southern Africa, probably in Africa, are not financially sustainable',[23] meaning that the access to capital to finance these energy projects is limited.[24]

Moreover, there are only three or four countries across Africa that have 'cost-reflective'[25] electricity tariffs.[26] Not only is this a major cause of the commercial inviability of power utilities, but it also weakens the business case for investors, as 'you need a revenue stream',[27] without which multiple finance institutions described the priority projects in the region as 'not bankable'.[28]

In the face of these risks, Southern African states (South Africa included) have preferred long-term bilateral electricity contracts over the SAPP competitive markets, often in the form of Power Purchase Agreements (PPAs);[29] indeed, much of the trading on the SAPP is 'artificial' in that the SAPP network is utilised for these 'bilaterals'.[30] The theorising similarly indicated that the pooling of power generally develops gradually as a collection of bilateral agreements.[31]

[22] Quote from Participant A; confirmed by Participants C, E, H, N, and P.
[23] Quote from Participant B; confirmed by Participants C, M, N, and P
[24] Confirmed by 9 participants.
[25] Cost-reflective pricing reflects the actual cost of supplying electricity (as opposed to subsidising it for the consumers, with the state taking on some of the cost, or the utility going into debt).
[26] Confirmed by 7 participants.
[27] Participant E
[28] Identified during Participant N's consultations with finance institutions.
[29] Participants C, M, S, and T
[30] Participants C and V
[31] Medinilla, Byiers, and Karaki, *African Power Pools*.

Though obtaining financing for regional energy projects is difficult, and many countries are 'at their limits' in terms of borrowing,[32] many participants reiterated the theory that finance remains available, particularly from the development finance institutions (DFIs), multinational corporations (MNCs), and Asian actors, particularly China:[33]

> 'Investment or the capacity for money to come from the East is quite significant.'[34]
> 'You need a DFI somewhere who's interested in putting the money there'.[35]
> 'Big banks are not going to fund financing. So unless you get BRICS to come and finance, which is not impossible.'[36]

The commentary on Chinese FDI was particularly notable, in terms of its flexibility, but also the attached *quid pro quo*:

> 'Chinese projects work in that they will build it for you. A new Head Office or new presidential palace… They don't dictate to you. They will do it for you. There's always a *quid pro quo*. In exchange, you need to give me [China] something - it's very often the kind of resources that they need, coal or whatever that is.'[37]

New financing has also become available through global trends towards renewables; though banks in South Africa 'will not bankroll any coal-fired [power plant] projects,[38] finance from the West is increasingly becoming available through 'Just Energy Transition Partnerships (JETPs).[39] Additionally, one of the participants maintained that Southern African governments are not as financially restricted as narratives would suggest:

> 'African governments still have literally hundreds of billions at their disposal… if African governments can very seriously cooperate… [as to] how they would deploy money to generate regional cooperation with masses of renewable energy, I think it's an investable thing.'[40]

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[32] Participant B
[33] Jaglin and Dubresson, 'Eskom & Africa.'
[34] Participant J
[35] Participant A
[36] Participant B
[37] Participant C
[38] Participant V
[39] Participant F
[40] Participant F

Lack of Neighbouring States' Energy Supply & Transmission Infrastructure

South Africa's neighbours' lack of the energy supply and transmission infrastructure ties neatly into the theory that domestic energy producers are often forced to choose between national energy objectives and regional commercial interests.[41] On the one hand, the 'entire [Southern African] region is constrained', in that almost all Southern African countries face domestic electricity supply deficiencies,[42] and therefore at any one time, a mere 300MW may be available via the SAPP competitive markets.[43,44] On top of that, even if those countries did not face supply deficiencies, their total generation capacities pale in comparison to the electricity demand of the regional economic giant, South Africa.[45]

On the other hand, there is a lack of transmission infrastructure to be able to handle the generation requirements for the region.[46] As aptly noted by a member of Eskom's International Trade department,

> 'We can have generation all over the place, but without the transmission infrastructure, then it becomes pointless.'[47]

This would appear to indicate quite strong reasoning for South Africa's decline in participation in the SAPP in recent years. Yet, another member of the same department at Eskom pointed out that even the 300MW available via the SAPP's competitive markets would be enough to displace the usage of one open-cycle gas turbine (OCGT) peaking

[41] Medinilla, Byiers, and Karaki, *African Power Pools*.
[42] Quote from Participant O; confirmed by 7 other participants. The theory suggested that reasons for this include a prolonged drought in the region (constraining hydropower plants), mismanagement of power utilities, and political instability.
[43] This refers to the SAPP's competitive markets, such as the Day-Ahead Market (DAM), and excludes the bilateral energy trading that uses the SAPP's grid.
[44] Participant S
[45] Participants A and N
[46] Confirmed by 10 participants
[47] Participant O

power unit[48] in South Africa.[49] Moreover, new regional electricity supply is becoming available, such as the 'Kafue Gorge [Power Station] investment in Zambia that was recently commissioned',[50] and the significant natural gas reserves in Mozambique have been spotlighted by experts as crucial 'transition fuels'.[51,52] For this reason, a former executive at Eskom was adamant in their discussions with the SAPP management and DFIs:

> 'That's what I was telling the guys doing the power pool [SAPP]: don't invest in new generation. Let us get our act together. And then we just build the transmission infrastructure so that we can trade… I always used to tell the funders and the lenders, like the African Development Bank, saying don't finance new generation projects, put your money in the transmission.'[53]

These points illustrate the complexities of South Africa's participation in the SAPP. Though the regional power currently participates minimally in the power pool it was instrumental in founding, such nuances help us understand why 'lately, we [Eskom] have wanted to buy power from the [SAPP] market.'[54]

Regional Geography, Endowments, and Projects

The classification of regional geography and endowments within the Global Theme of *Regional Political Dynamics* is in sync with this paper's conceptualisation of the broader social dimensions of natural resources, as the products of joint natural and social

[48] The peaking power plants, or 'peakers', are very expensive diesel-fuelled plants run to meet peak electricity demand. Peakers drain Eskom's budget, exacerbating the utility's already-significant debt.
[49] Participant S
[50] Participant M
[51] A strong narrative accompanying energy transitions to renewables is that of a 'transition fuel' – a low-carbon fuel that could temporarily replace the 'baseload' (consistent, dependable power supply to meet minimum demand) of high-carbon fuels like coal and oil, whilst the renewable energy generation proliferates to be able to meet minimum demand.
[52] Participant B
[53] Participant V
[54] Participant T; Participant M confirmed that 'there are talks to increase [imports] further'.

processes.[55] Tightly interlinked with the *Project Financing and Complexity* Organising Theme, participants' comments on this theme emphasise Southern Africa's differences with Europe in terms of geography:

> '[Europe] didn't have the long [transmission] line problem that Southern Africa has.'[56]
> 'The landscapes are so diverse… so far apart… it is an engineering challenge.'[57]
> 'The distances are great; the countries are much bigger.'[58]

These geographical characteristics have complicated South Africa's participation in the SAPP's energy projects, particularly considering the need for HVDC lines to 'carry big volumes of energy over a massive length.'[59] However, there are potentially very high rewards for such engagement:

> 'The cheapest generation options may very well lie outside of our borders… useful options are in Mozambique,… Zambia,… Zimbabwe.'[60]
> 'And [the regional run-of-river hydropower projects][61] will make the world of difference to this market.'[62]
> 'To develop projects like [Grand] Inga [Dam], you would actually benefit from economies of scale on a regional basis.'[63]
> 'You've mentioned Batoka [Gorge Dam], you've mentioned Mphanda Nkuwa [Hydropower Dam], those are exciting projects coming through… [that] will benefit the entire region, and South Africa especially'.[64]
> Botswana has excess coal – 1,200MW of coal power potential; South Africa should jointly develop infrastructure with Botswana to capitalise off this.[65]

Such projects exploiting the region's significant natural resource endowments have been a strong lure for South Africa's participation in the SAPP, and shed light on why the

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[55] Le Billon, *Wars of Plunder*.
[56] Participant Q
[57] Participant P
[58] Participant R
[59] Participant C
[60] Participant A
[61] Such hydropower projects harness the flow of a river to generate power, without requiring a dam or reservoir.
[62] Participant C
[63] Participant I
[64] Participant O
[65] Interview notes from Participant S

World Bank estimated that returns to cross-border investment in the SAPP could be as high as 120%.[66] However, they are not without their complications:

> 'They [Batoka Gorge Dam developers] were way over-estimating the production that's probably going to come out of it'.[67]
> 'You might get some more [power] from Mozambique but I think the timeline for that is five to seven years'.[68]
> 'The big one is the Grand Inga [Dam] investment, with very long transmission lines. People have been dreaming about that for three, four, or five decades. We might still see Inga III [Dam], the next incremental investment happening, but these are still very big and then involve power being transported across multiple countries… I think it will happen in time, but it's not going to happen soon'.[69]

Regional Politico-Economic Stability

A major inhibitor to the development of regional projects is 'political economic instability' in Southern Africa.[70] This manifests itself in several ways. One is the uncertainty and risk associated with unstable economies and commercially inviable utilities:

> 'The risk profile for these kinds of countries… their Moody's risk rating is extremely low, so…when you rank Africa against others, there are a lot more uncertainties in Africa'.[71]

In such economies, corruption and neo-patrimonialism have obstructed regional projects, with Southern African utilities 'being used as mechanisms for government to achieve social and political goals'.[72] Participants described such issues as amongst the most significant impediments to the completion of the Grand Inga Dam:

> 'There was always [in the Dam project planning] - I wouldn't say corruption - it was always people trying to see what's in it for them.'[73]

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[66] Eberhard et al., *Africa's Power Infrastructure*.
[67] Participant H
[68] Participant J
[69] Participant M
[70] Participant H
[71] Participant P
[72] Participant B
[73] Participant V

> 'Everyone's trying to figure out how they're gonna make money out of it.'[74]

With various internal conflicts and civil wars in the DRC, 'to expect the Grand Inga [Dam] to be done in the next decade, in my view, is ambitious'.[75] Two participants mentioned the proposal for an 'international concession area',[76] an 'enclave which you give international recognition of and protection' around the Dam.[77]

Such politico-economic stability in the region helps to understand South Africa's hesitancy to invest in regional energy integration projects. Yet the country may not detach itself from them either, explained a senior official in Eskom, lest it worsens the extant instabilities:

> 'The impact to these countries [of cutting off their electricity supply from South Africa] would wipe them out literally… so it could destabilise the region in a big way.'[78]

Such dependent energy integration seems epitomic of the asymmetric interdependence posited in the neoinstitutional literature on hegemony.[79]

The other notable manifestation of this instability is through climate change effects, which have had the effect of 'destabilising the climate or destroying local environment, destroying water tables, destroying capacity to produce food, increasing chances of extreme weather events'.[80] Such climate change effects are related to the ongoing drought

[74] Participant J
[75] Participant G
[76] Participant H
[77] Participant C
[78] Participant A
[79] Stein, *Why Nations Cooperate*; Ikenberry, *After Victory*.
[80] Participant F

in the SADC region, 'which has necessitated prolonged loadshedding',[81] and compromises some of the new energy projects too:

> 'When what Southern Africa really needs is cheap, affordable, and clean power, climate change effects can drive you in exactly the opposite direction… It looked like some of the new [hydropower plant] plans were really vulnerable.'[82]

South Africa's Regional Dominance & Leadership

The regional political dynamics around the SAPP are significantly influenced by the abovementioned asymmetric interdependence between South Africa and its neighbours. The theorising has already suggested that South Africa's participation in the SAPP is linked to its intention to assert its power in the region.[83]

Though the theorising indicated that regional powers are often energy exporters (to a regional power pool's grid), South Africa is both an exporter and importer.[84] The state's 'regional hegemonic' is a complicated one: Eskom, 'despite its current financial woes, still remains for most lenders a credible counterparty' for regional projects that other Southern African states 'may not be able to develop themselves'.[85] Yet, as discussed in the next section, the state is facing significant domestic generation deficiencies, and when South Africa 'loadsheds' due to those deficiencies, 'it also loadsheds Namibia, and Lesotho, and Swaziland [eSwatini]'.[86]

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[81] Participant O
[82] Participant H
[83] Umezurike, Iwu, and Asuelime, 'Socio-Economic Implications of South Africa's FDI in Southern African Development.'; Vanheukelom, *SADC: Living with a Powerful Neighbour*; Medinilla, Byiers, and Karaki, *African Power Pools*.
[84] Participant M confirmed that South Africa exports approximately the same percentage of its electricity that it imports (around 5-6%), owing to export contracts whilst simultaneously facing a domestic generation shortage.
[85] Participant A
[86] Participant M

This situation has exacerbated an already-thorny set of relationships that South Africa has with its neighbours. Though the state is by far the largest economy in the region, there is a 'fair amount of resistance to [South Africa's] 'Big Brother' interests, in telling us what to do'.[87] Indeed, 'South Africa is seen as very paternalistic by some of the SADC countries, especially [considering] Eskom, going back 10 or 15 years ago, was the white Afrikaner bastion'.[88]

When South Africa, in the late 2000s, began to endure supply shortages for the first time, it began 'cutting them [South Africa's neighbouring countries] off [from power]'; when it then approached those same countries, this time 'looking for power, they never trusted us [Eskom]. And I think that's still a big issue – the issue of trust.'[89] Despite this, a former executive official at Eskom maintains that South Africa 'still has some credibility':

> 'I spoke to the Chairperson [of the SAPP Executive Committee]. He said that people check whether the Eskom Chief Exec[utive Officer] is coming [to the SAPP Executive Committee meetings]. "Isn't he coming in?" So they use it as a space to go connect.'[90]

Foreign Relations & Foreign Influence[91]

The construction of foreign relations/influence as an Organising Theme is in line with the preliminary theorising's emphasis on globalisation and external drivers as important

[87] Participant I; Participant Q also used the term 'Big Brother' to describe the antagonism towards Eskom and South Africa.

[88] Participant H; this comment refers to Eskom's history as an all-white employer during years of the apartheid regime.

[89] Participant V

[90] Participant B

[91] Though this theme refers to actors located outside of Southern Africa, its inclusion within the *Regional Political Dynamics* Global Theme is a result of this paper's aforementioned conceptualisation of regions as fluid, socially-constructed spaces.

drivers for regional energy integration in Africa.[92] The data seem to confirm the theory's suggestion that the balance of power in regional power pools is changing with the globalising of energy projects, including the proliferation of DFIs, MNCs, and Asian actors in the financing and development of regional energy projects.[93]

Already mentioned was China's role in energy projects, including its efforts to secure natural resources in the region. A former Eskom executive official lamented that Chinese involvement in the Grand Inga Dam soured the DRC's relations with South Africa:

> 'The Chinese tried to come in [to the Grand Inga Dam project] and the DRC government tried to appease the Chinese. And when the work was going to be given out, they had separate agreements with the Chinese, and we [South Africa] turned around and said but we need to be involved to build this together.'[94]

The data also corroborate the theorising's mention of more subtle, neo-colonial foreign influence in regional energy politics[95], in the form of the JETPs:

> 'The majority of European powers want oil and gas in Africa to be exported to them for their own energy security… a JETP is the most powerful way for foreign investing nations to "cherry pick" the regional superpowers and ensure that they can work with them on their domestic situation… their own national JETP that does not include a regional integration plan… becomes less and less likely to participate in these regional power pools.'[96]

Mindsets of National Self-Sufficiency & Guarding Sovereignty

The theorising already highlighted the prominence of the tradition of guarding national sovereignty.[97] A senior official at Eskom asserted that 'the problem is to get politicians to break out of the mindset [of national self-sufficiency], that I can rely on my

[92] Fawcett and Gandois, 'Regionalism in Africa and the Middle East.'; Solingen and Malnight, 'Globalisation, Domestic Politics, and Regionalism.'
[93] Jaglin and Dubresson, 'Eskom & Africa.'
[94] Participant V
[95] Bach, *Regionalism in Africa*.
[96] Participant F
[97] Hartmann, 'Sub-Saharan Africa.'; Valickova and Elms, 'Potential Gains from Regional Integration.'

neighbouring country to generate for me'.[98] Such a mindset appears to influence South Africa strongly too, lamented an executive official at the RERA:

> 'I think also [South Africa] has been very much inward-looking, and forgetting the actual benefits for participating in the regional project.'[99]

The same official noted a general tendency amongst the SADC states to resist ceding sovereignty to regional organisations, which has been the major stumbling block for 'transforming RERA from being an Association to an Authority' with binding power.[100] An Eskom International Trade expert explained that this is due to 'a reluctance from individual regulators [members of RERA] to have their powers taken away from them.'[101] Outside of the regulatory space, this may also be ascribed to concerns about project risks and ownership:

> 'It is not so easy when you're going to be paying for something that is not in your country. Infrastructure is developed somewhere, you don't own the asset.'[102]

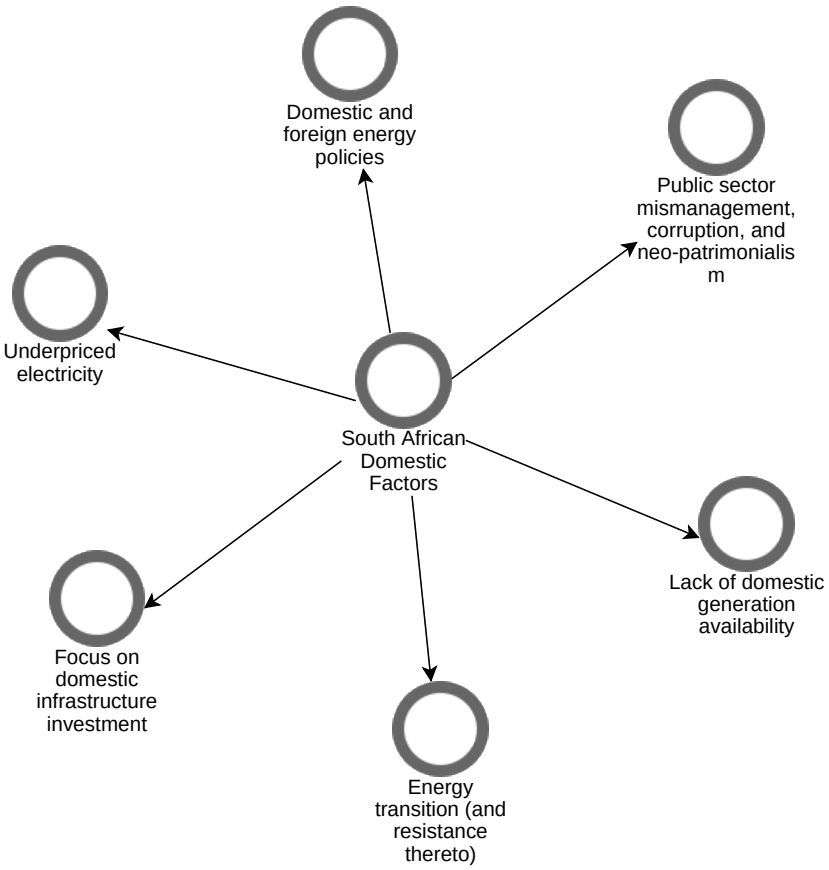
4.2 South African Domestic Factors

The second of the Global Themes, *South African Domestic Factors*, is strongly tied into the GPE theory on state preferences and their influence on the interplay between domestic politics and global cooperation.[1] The six Organising Themes constituting this Global Theme share the common thread of emphasising the importance of domestic

[98] Participant A
[99] Participant I
[100] Participant I
[101] Participant O
[102] Participant T
[1] Milner, *Interests, Institutions, and Information*; Fearon, 'Domestic Politics, Foreign Policy, and Theories of IR.'; Moravcsik, 'The New Liberalism.'

factors within South Africa for understanding the state's participation in the energy integration efforts of the SAPP. The thematic network is illustrated in *Figure 5* below.

Figure 5: Thematic Network for South African Domestic Factors



Domestic and Foreign Energy Policies

This first Organising Theme prioritises a focus on the policy level for understanding South Africa's participation in regional energy integration efforts. The most visible way in which these levels manifest is through the legislative restrictions on Eskom's ability to source power from the region:

> 'There's always an allocation in the IRP [South Africa's Integrated Resource Plan] for inputs from externally… a small component[2]… we seem to be wrapped up in a lot of laws… as a state-owned entity [Eskom], we can't go and develop in another country… in the way the current Electricity Regulation Act is written – we don't have the authority to go there. That's the preserve of the Minister of the Department of Mineral Resources and Energy[3]'.[4]
> 'There are countries that are more - what word should I use? - liberal in terms of their energy policy.'[5]

Several participants blamed these restrictive and outdated policies for the 'energy crisis' – recurring deficiencies of domestic generation availability – that South Africa has experienced since the late 2000s. Had Eskom been allowed to increase its generation capacity earlier – 'to do what they wanted to do' – argued a project financing expert, 'this [energy crisis] would have been a non-issue'.[6]

Reflecting on such a possibility, a senior official at Eskom said they would have 'engaged in several contracts that wouldn't have given us huge chunks of power, but could have given us power at reasonable prices.'[7] Even in the midst of the country's energy crisis, bemoaned an executive official at the RERA, 'there could have been less pressure on Eskom, because it could have gone to the [regional] market' to obtain more affordable rates than those of the peaking power plants.[8]

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[2] The interview notes from Participant S confirmed that bilateral energy trade agreements must always be in terms of the IRP, which talks to allocations for the national energy mix. In addition, there is only a small allocation for hydropower (currently limited to the Inga Dams in the DRC, the Cahora Bassa Dam in Mozambique, and the Lesotho Highlands Water Project).

[3] Participant S also explained how new generation regulations are issued by the Minister of the DMRE; such regulations are generally restrictive and do not include cross-border trade. Thus, even though bilaterals tend to be more reliable than trading on the SAPP competitive markets, the domestic legislation is more problematic for the former.

[4] Participant A

[5] Participant O

[6] Participant C

[7] Participant A

[8] Participant I

If this is the case, why have policymakers in South Africa generally obstructed increases to the state's participation in the SAPP,[9] beyond the extant bilateral agreements? Participants offered various reasons. One is a lack of awareness of the potential of regional power projects:

> 'It's [the region's energy potential is] not properly developed, it's not properly understood. There's no work on the goal. There's nobody busy working on a PPA to enable that.'[10]

Another reason merited another entire Organising Theme, namely *Public Sector Mismanagement, Corruption, and Neo-Patrimonialism*, but for now may be summarised by an official within the DMRE:

> 'My Minister [of the DMRE, Gwede Mantashe] must start thinking about a framework on top, how to pull all these things together, because at the moment, things are so scattered.'[11]

Yet another reason is that the inclusion of a cross-border allocation in the IRP is merely foreign policy 'lip-service', intended to placate South Africa's neighbouring states and maintain a façade of regional leadership qualities. This stance is one adopted by a senior official at Eskom:

> 'We [South Africa] just put these numbers [cross-border trade allocation in the IRP] in there to appease some of our neighbours… any of the foreign set of partners.'[12]

A former executive official at Eskom would differ, at least partially, in that 'we [South Africa] get 1,300MW from Cahora Bassa [Dam]. And if we didn't get that, that would be two more stages[13] [of loadshedding].'[14] Moreover, the extant 2,500MW agreement with

[9] Particularly considering that, as noted by Participant S, the IRP can be updated at any point to include a higher provision for cross-border trade, and with an energy mix that allows for more hydropower, on which most of South Africa's neighbours rely.

[10] Participant A

[11] Participant U

[12] Participant A

[13] Loadshedding in South Africa is conducted in 'stages', in other words, at varying frequencies and lengths of periods when the power is deliberately shut down in order to preserve the stability of the grid.

[14] Participant V

the DRC for hydropower from Inga Dams I and II has been unreliable,[15] so policymakers might be forgiven for being hesitant to expand the IRP.

One notable change in South African domestic energy policy in recent years has been the increasing allowance of private sector participation in electricity generation. A member of South Africa's National Planning Commission and Ministerial Advisory Council on Energy confirmed the longer-term vision here:

> 'Separate out the natural monopoly components and create competitive components of generation. And then, an independent transmission system operator[16] creates a fair and transparent platform for [private sector] generators to compete… in the form of long-term contracts, which is the way in which IPPs are currently.'[17]

Energy Transition (& Resistance thereto)

The politics of a 'just' energy transition is a core theme with respect to South Africa's participation in the SAPP, because such political dynamics influence the state's energy mix, and thus the regional energy projects in which it participates. Contrary to the often-perceived consensus around the need to transition to renewables, perspectives on the energy transition vary significantly.

On one end of the spectrum is essentially 'coal fundamentalism', a position explicitly adopted by current DMRE Minister Gwede Mantashe, and rooted in 'vested interest in terms of coal mines… transports, and thousands of unions'.[18] The 'whole of Europe

[15] Participant T

[16] This refers to the vision to create an Independent Transmission System and Market Operator (ITSMO).

[17] Participant M; this is important context for the theme of private sector participation in the next section.

[18] Participant C

industrialised on coal',[19] yet 'Africa is not allowed to help themselves. If we have the [fossil fuel] resources, why are we not allowed to use it?'[20] Southern Africa enjoys vast deposits of coal, particularly in South Africa and Botswana, and 'fossil fuel extractivism has been a dominant underpinning model of economies for decades'.[21]

More moderate positions essentially adopted the *common but differentiated responsibilities* principle,[22] refuting the suggestion that South Africa – or indeed the Global South – should transition immediately, and rather advocating for 'a place for every [energy] technology in South Africa'[23] in the medium-term, or alternatively, complementing incoming renewable technologies with 'gas, as a transition [fuel]',[24] to ensure a consistent level of baseload.

On the other end of the spectrum, 'we have to do the responsible thing… to completely reshape the economy.'[25] Such positions tend to reject the 'transition fuel myth', since 'there is no way in which investment in [natural] gas does anything other than beget further investment in gas'.[26] Moreover, 'solar PV [photovoltaic systems] prices dropped 90% over a decade, and wind [power] about 70%';[27] however, with South Africa's limited 'penetration of solar and wind of around 9-10%',[28] these variable resources would need

[19] Participant C
[20] Participant J
[21] Participant F
[22] A principle formalised at the 1992 United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro.
[23] Participant V; there was some consensus on the need for a diversity of energy sources.
[24] Participant M
[25] Participant H
[26] Participant F
[27] Participant M
[28] Participant V

to be complemented by other power sources, or a functional regional power grid across Southern Africa.[29]

Lack of Domestic Generation Availability

Though only just featuring in the highest 10 most-frequently-referenced Organising Themes, the matter of South Africa's deficiencies of consistent domestic generation supply to meet its electricity demand has already been well-established. Indeed, the theorising emphasised that domestic generation shortfalls may be the most significant blockers of regional energy integration,[30] and the literature reviewed in *Chapter 2* suggested that this Organising Theme should be a common one.[31]

Participants largely confirmed the historical trajectory of South Africa's energy situation that was laid out in *Chapter 1*: historically, Eskom had significant excesses of power, and 'sold it on the SAPP market'; an expert at Eskom and the SAPP described that period as a '"blue sky" kind of approach, in terms of the possibilities'.[32] Yet as Eskom was prevented from building new generation capacity (until it was too late)[33] and planned

[29] Participant Q cited a study modelling the renewables potential across Southern Africa, which found that the region could be easily supplied with renewables, provided storage capacity is available. This is in line with Participant R's models for the region.

[30] Vanheukelom and Bertelsmann-Scott, *The Political Economy of Regional Integration in Africa: SADC*; Medinilla, Byiers, and Karaki, *African Power Pools*.

[31] Jaglin and Dubresson, 'Eskom & Africa.'; Montmasson-Clair and Deonarain, 'Regional Integration in Southern Africa.'

[32] Participant T

[33] Participants C and L

maintenance was stalled,[34] the availability factor[35] of its power plants decreased, the state became unable to consistently meet the electricity demands of its citizens, and has generally opted for energy individualism since the late-2000s.[36]

In the face of this energy crisis, an executive official at the SAPP argued that such challenges 'are driving it [South Africa] to need its neighbours much more than it has been in history.'[37] A senior official at Eskom concurred, noting that 'we don't think that the existing generation [in South Africa] will be able to meet the requirements. So therefore, the solution lies outside of our current generation.'[38] This situation has also resulted in the involvement of the South African private sector in electricity generation skyrocketing.[39]

Public Sector Mismanagement, Corruption, & Neo-Patrimonialism

Equally referenced with the lack of domestic generation availability, public sector bureaucracy, corruption, and neopatrimonialism are cited by the participants as major factors affecting South Africa's participation in the SAPP, since 'government themselves have not organised in a way in which they can entertain this conversation [about project development abroad].'[40] Amongst these, corruption appeared most prominent:

[34] Participant D

[35] A power plant's availability factor refers to the amount of time it is able to produce in a given period, divided by the total amount of time in that period. The nuance in terminology is important here, clarifies Participant V, as 'South Africa's loadshedding situation is not an issue about new *capacity*. It's about [the *availability* of] existing capacity… you sit with this massive surplus if you just keep everything available.'

[36] Participants N and T

[37] Participant N

[38] Participant A

[39] Participant M

[40] Participant A

> 'It didn't help that there was some corruption in Eskom.'[41]
> 'Corruption at all levels… political interference in the management.'[42]
> 'These [big coal plant contracts] are where I think a lot of corruption started creeping in.'[43]

The maintenance of non-cost-reflective electricity tariffs by the NERSA and the stalling of planned maintenance on power plants were also linked with political interference:

> 'In all these years, they didn't implement cost-reflective tariffs, there was always some excuse, you know, that there's an election coming up… then of course, we had the [2010 Football] World Cup come up, and then all the maintenance and everything had to be put on hold.'[44]
> 'We will literally talk, it's election year. We cannot have outages, we cannot have reduced power availability, you run those [power plants] year on year on year, and we are unfortunately reaping the bad consequences of those political decisions.'[45]

Underpriced Electricity

As with the lack of domestic generation supply, the theme of underpriced electricity has also been well-established already. Its relevance to South Africa's participation in the SAPP is particularly pertinent considering the relative non-competitiveness of the SAPP markets in comparison:

> '[South Africa's] tariffs are not really supposed to [be this low]. How would you expect South Africa to be able to view the region with it?'[46]

Furthermore, the 'consistent under-recovery' of selling electricity below cost-reflective tariffs incurred significant debt, which in turn affected Eskom's commercial viability for financing and regional projects:

> 'The only way you deal with under-recoveries: you borrow. And so that's the reason why Eskom now sits with R400 billion worth of debt.'[47]

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[41] Participant C
[42] Participant J
[43] Participant Q
[44] Participant Q
[45] Participant J
[46] Participant I
[47] Participant C

Focus on Domestic Infrastructure Investment

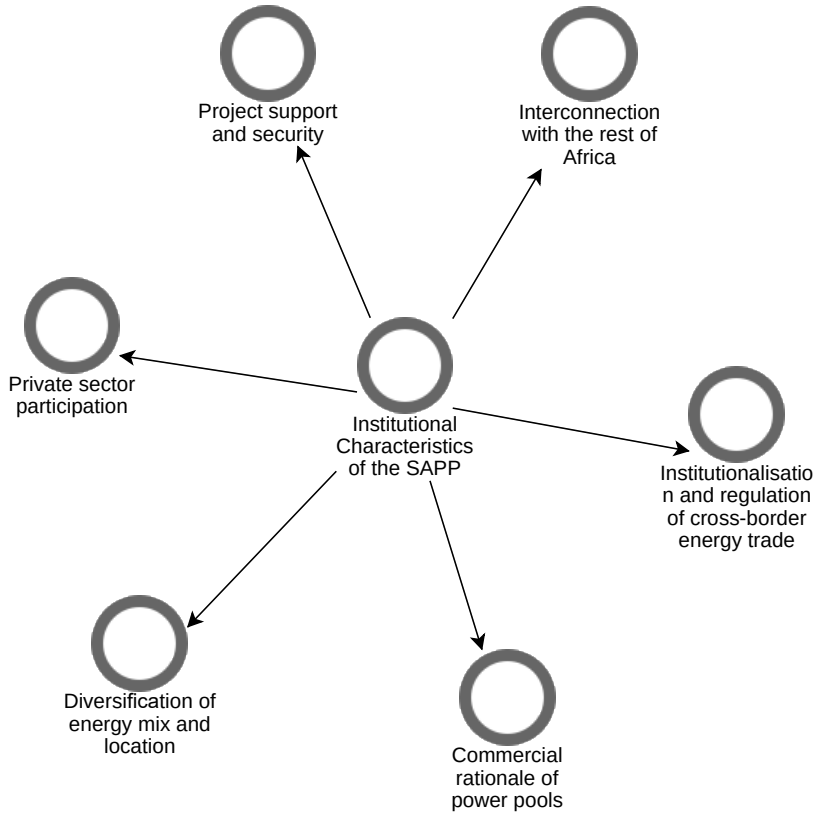
One final Organising Theme concerns a core policy priority in response to South Africa's energy crisis: domestic infrastructure investment. While the private sector has begun to play a substantial role in generation, the state's national grid is incapable of taking on more power,[48] forcing Eskom 'to embark on the biggest capital spending in the transmission space ever: over the next 10 years, our transmission spend is in excess of R170 billion.'[49] This is an important consideration for South Africa's involvement in the SAPP, as such domestic infrastructure is necessary for the transmission and distribution of power imported from the region too.

4.3 Institutional Characteristics of the SAPP

The third and final Global Theme, the *Institutional Characteristics of the SAPP*, is grounded in the neoinstitutional theory regarding the role of institutions for providing information to member states, facilitating exchanges between them, reducing transaction costs, and maintaining cross-border regulatory standards.[1] Though the six Organising Themes constituting this Global Theme cumulatively are referenced less frequently than the other two Global Themes, they remain significant and two of the Organising Themes feature amongst the top five most-frequently-referenced. The thematic network for this Global Theme is depicted in *Figure 6* below.

[48] Participant D
[49] Participant A
[1] Rose, Stoner, and Pérez-Arriaga, *Integrating Market and Bilateral Power Trading in the SAPP*; Medinilla, Byiers, and Karaki, *African Power Pools*.

Figure 6: Thematic Network for Institutional Characteristics of the SAPP



Commercial Rationale of Power Pools

Chapter 1's research puzzle elaborated on the theoretical 'business case' for regional power pools, including the macroeconomic and societal benefits associated with regional energy integration.[2] Perhaps predictably, the executive officials from the SAPP and the RERA were very much aligned with this theory:

> 'You can actually use regional power trading to address national priorities. Things like increased [energy] access, good security of supply, improved financial performance.'[3]

[2] Eberhard et al., *Africa's Power Infrastructure*; Arndt et al., *The Political Economy of Clean Energy Transitions*; Medinilla, Byiers, and Karaki, *African Power Pools*; Montmasson-Clair and Deonarain, 'Regional Integration in Southern Africa.'; Valickova and Elms, 'Potential Gains from Regional Integration.'

[3] Participant I

> 'The market creates good opportunities, at least to ensure that the wholesale level of electricity could be obtained at the best price that will then help improve the bottom line of the utilities… from an energy trading point of view, the core economic sense makes sense.'[4]

Senior officials within Eskom (and its Advisory Panel), however, were more hesitant:

> 'You're never able to get sufficient volume to offset the cost of the infrastructure spent… who's going to own the assets, who's going to manage and operate them to develop it?... In my mind, there would really be a business case for importing… but the developers or the investors are not the ones [to enjoy the fruits of the investment].'[5]
> 'I think a kind of mutual trade around electricity is enormously beneficial going forward and that should be maintained… international trade is an important component of that [security of energy supply], especially in countries that have hydro[power] with big dams, which effectively act as big batteries.'[6]
> 'It's [the SAPP is] actually an artificial pool. It's not delivering what it should be.'[7]

An important component of the commercial rationale of the SAPP, in the context of financially inviable utilities in Southern Africa, is the role of the regional market demand, which can serve as *de facto* contract security, instead of the usual long-term contracts with offtakers:

> 'The [SAPP] market itself is proving that it can deal with inability to pay by creating opportunities where you're not looking at long-term Power Purchase Agreements, but doing those shorter-term, it's then easier to manage the obligations to pay.'[8]
> 'Look at the historic market-clearing price of the [energy to be traded], and use that for what you would have wanted in the partnership agreement, which is basically the price guarantee.'[9]
> 'It's always good to have these grids interconnected because they diversify your risk plans'.[10]

Diversification of Energy Mix & Location

A significant aspect of the rationale of regional power pools, which warranted its own Organising Theme, is the potential for regional power pools to 'tap into underutilised resources' in the region,[11] to 'diversify opportunities to where there is excess

[4] Participant N
[5] Participant A
[6] Participant M
[7] Participant V
[8] Participant N
[9] Participant K
[10] Participant O
[11] Participant R

generation'.[12] Regional power pools offer the opportunity to capitalise on 'Africa's vast natural resource endowments' mentioned in *Chapter 1*,[13] through optimising the cross-border utilisation of endowed renewable resources, such as hydropower, solar PV, and wind.[14]

Yet South African policymakers are not only interested in the renewable resources in the region, particularly considering the proximity of Botswana's 'mountains of coal',[15] and the 'massive gas reserves in Mozambique [that] are ideal for that [energy] transition.'[16] Regardless of which source of power, a former executive official at Eskom maintained that South Africa cannot 'just cut off the neighbouring countries… because they sit with a lot of power reserves… where the massive [energy] potential comes in.'[17]

Institutionalisation & Regulation of Cross-Border Energy Trade

The theorising underscored the role that regional institutions, such as power pools or regulatory bodies, can play in institutionalising the coordination of regional energy trade operations, and harmonising standards across interstate energy markets.[18] An executive official at the RERA emphasised this value for South Africa's extant participation in the SAPP, highlighting the work being done for 'oversight of the regional market', a

[12] Participant O

[13] Elbadawi and Mohammed, 'Natural Resources in Africa.'; Macuane, Buur, and Monjane, 'Power, Conflict and Natural Resources.'

[14] Participants C, E, F, I, J, M, N, O, Q, R, and V. Even the major concern with variable renewables – that of requiring 'baseload' – theoretically can be mitigated at a regional level, confirms Participant C, since 'if you've got lots and lots of wind, in different places, it can actually become what looks like baseload… because of the diversity of distribution and the different spread of wind patterns.'

[15] Quote from Participant C; confirmed by Participant Q, who advocated for the feasibility 'clean coal' (involving the carbon capture of greenhouse gas emissions from the coal).

[16] Participant E

[17] Participant V

[18] Sichone, 'Regional Electricity Marketed-Related Regulatory Initiatives.'

'framework to do transactions', and drafting of guidelines for managing new technologies entering the market.[19] Moreover, an official in Eskom's International Trade Department noted that 'the revised SAPP transmission plan… will encourage investment in transmission infrastructure', addressing the extant lack of 'incentive to invest in generation or transmission predicated on the [relatively higher SAPP] tariffs'.[20]

These benefits also extend to capacity-building and the 'sharing of expertise': '[the region] can benefit from the developed countries or regulators… something that took NERSA 10 years to do, the others should take three or four years, because they can adopt or adapt'.[21] This is not only one-way from South Africa, however, as the RERA executive pointed out that 'the first regulator in Southern Africa [the NERSA] is not the best. I think NERSA is rated number 22 of 44 regulators in Africa'.[22] Thus, South Africa stands to gain from such expertise-sharing too, which would incentivise its participation in the initiatives facilitating the regional capacity-building, including the SAPP and the RERA.

However, as per the theorising on traditions of guarding national sovereignty, 'there is reluctance from individual regulators to have their powers taken away from them', meaning the 'RERA doesn't really have enforcement power on its member states'.[23] This may be better understood in the context of the Eskom senior officials' concerns about the regional bodies' capacity to institutionalise regional energy trade operations:

[19] Participant I
[20] Participant O
[21] Participant I
[22] Participant I
[23] Participant O

> 'These [SAPP Executive Committee] meetings [to plan regional projects] are not action-oriented meetings. They are largely political.'[24]
> 'I think it [the SAPP] was a bit disorganised.'[25]

Conversely, one former executive official in both Eskom and the SAPP pushed back, emphasising the SAPP's potential:

> 'They [the SAPP] do have all the elements to be in the working for the most successful [power] pools in the world.'[26]

Private Sector Participation

The last section noted the rapid transition in South Africa towards allowance of private sector participation in generation. This is crucial context for understanding South Africa's participation in the SAPP, which itself has, at the behest of the SADC Energy Ministers, 'decided to open up to the private sector in the region'.[27] Indeed, an executive at the SAPP confirmed that 'we're currently sitting with a lot of applications of IPPs in the various member countries of the region',[28] accompanying extant corporates such as the Copperbelt Energy Corporation (CEC) in Zambia, which one of its management asserted 'has been the most active participant on the SAPP'.[29]

Amidst the regional generation supply deficiencies, several participants considered these developments instrumental for South Africa's participation in the SAPP, as 'the only players who can make the power available are private investors – IPPs',[30] given that 'very few African countries can really afford to build new power stations.'[31] Although

[24] Participant A
[25] Participant V
[26] Participant E
[27] Participant G
[28] Participant N
[29] Participant G
[30] Participant T
[31] Participant J

the theorising anticipates that regional powers' NPUs may resist their monopolistic positions being threatened by increased competition,[32] it appears that South Africa's energy crisis gave the impetus for policymakers to allow private actors to sell to the regional market.[33]

Project Support & Security

A key component of the institutional role of the SAPP in project development is the SAPP's Project Advisory Unit (SAPP-PAU), which ensures that 'all the projects that are proposed go through proper feasibility studies and they are bankable'.[34] Considering Eskom's high debt and strained commercial viability, the SAPP-PAU acts as an additional incentive for South Africa's participation in the regional energy projects, as another mechanism by which to mitigate the market uncertainty around regional projects that may be crucial to filling South Africa's energy supply deficit.[35]

Interconnection with the Rest of Africa

The final Organising Theme is the SAPP's role as the mechanism by which the Southern African region is interconnected to the rest of the continent. Executives in the SAPP and the RERA expressed their optimism regarding the 'power interconnections that will definitely lead to the project of the African Single Electricity Market'[36] – 'in the near future, we will have a Cape-to-Cairo kind of interconnection'.[37] Indeed, a senior official

[32] Clements et al., *Energy Subsidy Reform*.
[33] Participant L
[34] Participant N
[35] Participant K
[36] Participant N
[37] Participant I

at Eskom noted that one of the few 'initiative[s] that worked very well cross-border in Southern Africa… [is] the East African Power Pool and SAPP interconnection'.[38]

The macroeconomic case for regional power pools is, in theory, multiplied when interconnecting such power pools,[39] which would provide additional incentive for South Africa's participation in the SAPP. However, a member of South Africa's Ministerial Advisory Council on Energy expressed reservations about these aspirations:

> 'I think we are a very, very long way from a single electricity market, à la European Union. There's lots of other stuff that has to happen, including just getting the [other African] regional pools operating effectively.'[40]

[38] Participant A; this refers to the ongoing, World Bank-funded interconnection project between the two regional power pools, via the Tanzania-Zambia Interconnector.

[39] Odetayo and Walsh, 'A Policy Perspective for an Integrated RPP within the AfCFTA.'

[40] Participant M

Chapter 5: Discussion

Following from the exploration of the thematic network analysis in the previous chapter, this chapter draws together the entire research design towards the generation of my argument in response to the research question, *how can South Africa's participation in the SAPP's energy integration projects be explicated?* The final phase of the analysis is the discussion of the thematic networks with reference to the research question, literature, and theorising. I first revisit the literature, iteratively comparing the conclusions of the preliminary theorising with the analysis in *Chapter 4*. I then draw on all of these to map the interactions between actors relevant to the research question, before wrapping everything together to finalise my argument.

This chapter discusses how South Africa's participation in the SAPP can be explicated as a complex web of interactions between my three thematic networks. I demonstrate how Southern African regional political dynamics are the most important of these three groups of factors and co-constitute the other two groups. Finally, I highlight key regional factors that are under-theorised in the literature, yet play an important role in the formation of domestic energy policy and shape considerations regarding participation in regional power pools.

5.1 Revisiting the Literature

The literature in *Chapter 2* suggested that there are five key explications for African regional powers' participation in their regional power pools: the regional powers'

domestic energy supply, their exploitation of the power pools for their national interests, the globalising of regional energy projects, traditions of guarding national sovereignty, and the opportunities/constraints associated with regional energy cooperation. Of these five, the first two had the most relevance with regards to South Africa and the SAPP, though the latter three had passing mentions in the literature too.

This paper nuances the literature ascribing South Africa's participation in the SAPP to one or two dominant factors. Firstly, while my analysis confirms the importance of South Africa's domestic energy supply shortfall for explicating the state's participation in the SAPP, it was certainly not the single overriding theme in participants' responses. The *Lack of Domestic Generation Availability* Organising Theme was indeed a prominent component of the thematic analysis, not only as a theme in and of itself, but how it interlinked with other themes (consider, for instance, its link with *Public Sector Mismanagement, Corruption, and Neo-Patrimonialism* or *Private Sector Participation*). Yet, contrary to the literature, it was not overriding in participants' responses, considering the depth of Basic and Organising Themes on topics *other than* generation capacity.[1] Moreover, whilst the responses linked to this theme largely confirmed the historical trajectory discussed in *Chapter 1*, they also suggested that the issue of South Africa's domestic generation deficiencies is motive to turn *towards* regional energy integration, not away therefrom. This discussion corroborates the theory in *Chapter 1* that the variation in performance of African regional power pools cannot alone be explicated by generation capacity.

[1] The hierarchy chart in Appendix K depicts how frequently Organising Themes on other topics emerged.

Secondly, whilst South Africa's intentions to assert its power in the region was the other common theme in the literature, my analysis nuances this matter too. The importance of South Africa leveraging the SAPP for its own national interests was clearly demonstrated through the Organising Theme of *South Africa's Regional Dominance and Leadership*. However, my analysis paints a significantly more complex picture of South Africa's dominance in the region: the interpretations of the participants' responses suggest that South Africa's coercive regional interests are complicated by its own domestic generation deficiencies, not to mention that there is a lack of trust of South Africa from its neighbours, which resist its perceived 'Big Brother' interests.

Looking more broadly at the Global Themes, *South African Domestic Factors* should have, according to the same literature, been the overriding theme, yet the depth of responses and frequency of references to the *Regional Political Dynamics* would suggest that these regional dynamics are more important, whilst the *Institutional Characteristics of the SAPP* appears to be an underappreciated group of factors for understanding the research topic. *Chapter 4* noted, with caution, the number of references for each of the Organising and Global Themes, and the foremost impression from the hierarchy chart in Appendix K is the dominant frequency with which themes related to *Regional Political Dynamics* emerged (almost double as often as the other two Global Themes, the latter of which emerged with similar frequencies).

The exploration of these themes in each section of *Chapter 4* confirms the participants' emphasis on regional factors – particularly *Political Willpower for Regional Cooperation*, *Regional Project Financing and Complexity*, and *Lack of Neighbouring States' Energy*

Supply and Transmission Infrastructure. My analysis demonstrates that these three Organising Themes co-constitute many of the other Organising Themes, thus playing a crucial part in understanding South Africa's participation in the SAPP. *Regional Project Financing and Complexity*, for instance, is contingent on *Regional Geography, Endowments, and Projects*, *Regional Politico-Economic Stability*, and South Africa's *Domestic and Foreign Energy Policies*, not to mention that remedying such financing issues is part of the *Commercial Rationale of Power Pools* and the *Project Support and Security* provided by the SAPP.

I argue that *Regional Political Dynamics* co-constitute[2] the other two Global Themes, namely *South African Domestic Factors* and *the SAPP's Institutional Characteristics*, in explicating South Africa's participation in the SAPP. To demonstrate this, I map the interactions between relevant actors in the next section of this chapter. Considering the relative lack of mention of regional political dynamics in the literature mentioning South Africa's participation in the SAPP, this is a notable conclusion. Such dynamics have been underappreciated in the literature, with only passing mention in one or two sources given to the topics of uncertainties in the SAPP grid and overlapping regional organisations.

The matter of *Regional Project Financing and Complexity* is worth particular attention, due to its absence in the theorising. The analysis of participants' responses indicates that the challenges of financing regional projects, preferences for low-risk trade

[2] As discussed in *Chapter 3*'s methodology, this paper emphasises constitutive theory and mutual constitution of factors. Co-constituted processes are those whose parts are contingent on one another. Schwartz-Shea and Yanow, *Interpretive Research Design*.

agreements, and non-cost-reflective electricity tariffs are notable factors for understanding the topic at hand. On the flip side, the exploration of the *Commercial Rationale of Power Pools* Organising Theme revealed the potential for the SAPP to resolve some of these issues. Indeed, the Basic Themes within this Organising Theme largely corroborated the theory undergirding this paper's research puzzle – the theoretical macroeconomic case for regional power pools.[3]

Chapter 2 mentioned the literature's neglect of the role of ideational factors, which the thematic network analysis was able to partially remedy with its discussions of politicians' mindsets of national self-sufficiency and tendencies to resist ceding sovereignty to regional bodies. This is no doubt interlinked with the participants' concerns about the lack of political willpower to cooperate with the SAPP's energy integration efforts. However, regionalist ideologies, such as Pan-Africanism, did not feature in the participants' responses, lending credence to the proviso in the theorising that regionalisms in the postcolonial world have historically been associated with the preservation of state sovereignty, not integration. Generally, I maintain that our understanding of the role of ideational factors in explicating regional powers' participation in their power pools remains limited, and I suggest that further research should focus specifically on the social construction of interests and identities,[4] and their role in shaping cooperation with regional energy institutions.

[3] There was, however, hesitation from the senior officials within Eskom and its national Advisory Panel, who expressed concerns about the volume of energy available from the SAPP.

[4] See Alexander Wendt, 'Anarchy Is What States Make of It,' *International Organisation* 46, no. 2 (1992); Peter Katzenstein, *The Culture of National Security* (New York: Columbia University Press, 1996); Martha Finnemore and Kathryn Sikkink, 'International Norm Dynamics and Political Change,' *International Organisation* 52, no. 4 (1998).

In line with the aforementioned critique of the literature's state-centric analyses of South Africa's regional power, few of the works reviewed made mention of the SAPP's institutional characteristics, despite this paper's analysis demonstrating their importance for explicating South Africa's participation in the power pool. Participants' responses conveyed that, despite its economic dominance in the SADC, South Africa still stands to gain from the regional capacity-building (particularly regulatory expertise-sharing), institutionalisation of cross-border trade, and regional project feasibility studies facilitated by the SAPP, particularly as they regard the potential to capitalise on the significant endowments of natural resources in Southern Africa.

However, the politicisation of the SAPP meetings and general preferences for bilateral energy trade agreements are two inhibitors of the SAPP's proper functioning – and thus its desirability for South African participation. Notably, again, these issues are tightly interwoven with regional political dynamics, as the lack of political willpower for regional cooperation and the complexities of regional projects inhibit the SAPP's ability to facilitate the regional trade of electricity, reduce transaction costs and uncertainty between members, and maintain cross-border regulatory standards. This may help understand why one of the works in *Chapter 2* cited short- to mid-term uncertainties in the SAPP grid as inhibitors of South Africa's participation in the power pool.

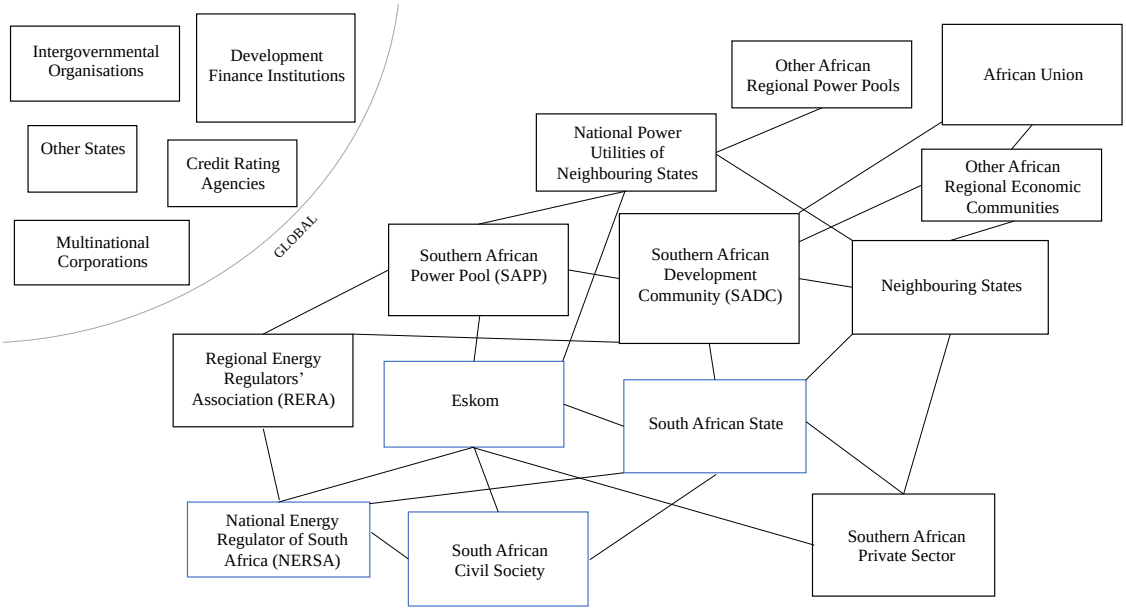
5.2 Mapping the Interactions

The previous section developed the argument that, of the three Global Themes, *Regional Political Dynamics* co-constitutes the other two Global Themes, and features in

the most depth and frequency amongst participants' responses. I now reinforce this argument by demonstrating how the various actors in my analysis interact with one another, undergirding the co-constitution of these processes.[5]

Figure 7 below maps the actors relevant to the research question (in each box), and uses lines to connect those actors that interact in some way. This figure is a simplified version of the detailed map in Appendix L; *Figure 7*'s broad groups of actors are listed in more detail in this appendix.[6] The actors in this map, and the interactions between them, are generated by the analysis of the participants' responses and themes, expanding on the theorising in *Chapters 1* and *2*, and the provisional list of actors in *Chapter 3*.

Figure 7: Map of Actors' Interactions



[5] Understanding co-constitution, as per my methodology, involves embedding meaning in context and understanding how actors conduct themselves within that context.
Braun and Clarke, *Thematic Analysis*; Baylis,Smith, and Owens, *Globalisation of World Politics*.

[6] For practical considerations of size and ease of depiction, I have placed the detailed map in the appendices, and a simplified version here.

The connecting lines in *Figure 7* indicate interaction and co-constitution, not any directional/causal relationship. Though the actors cannot be cleanly split into levels of analysis,[7] those actors that are more global in scope are demarcated in the top left of the figure, and interact with all other actors in the map.[8] The actors whose activities are concentrated (though not restricted) more at the domestic level in South Africa have blue boxes.

This figure is an important contribution of this paper. Firstly, it offers a visual depiction of the complex array of actors and interactions contextualising South Africa's participation in the SAPP. The theorising discussed how this participation is primarily through Eskom, as the SAPP is comprised of the NPUs of its member states, yet this figure allows us to see how Eskom's decisions *vis-à-vis* the SAPP are constituted by many more actors than merely the South African state. Eskom must take into account its direct engagements with the NERSA, the South African civil society, the Southern African private sector, and neighbouring states' NPUs, as well as indirectly (via the South African state), the SADC and South Africa's neighbouring states, not to mention all the global actors.

Secondly, *Figure 7* connects a number of this paper's tabular contributions regarding the context around South Africa and the SAPP, including the African regional power pools (Appendix A), the other NPUs and operating members of the SAPP (Appendix B),

[7] Indeed, this paper's conceptualisation of regions suggests their fluidity, and thus the blurring of divides between levels of analysis.

[8] The choice to depict the global actors in this way is because attempting to linearly connect these actors with all the other actors in the figure would have made it unreadable.

and even the interview participants' departments/companies/organisations linked to the research topic (Appendix D). This rigour of analysis is unparalleled in the literature, and offers insights into the complexity of the context in which regional powers participate in their regional power pools.

Thirdly, this figure demonstrates the importance of multi-level analysis when explicating a regional power's participation in regional energy integration projects. Key examples of this are the interlinked Organising Themes of *Energy Transition (and Resistance thereto)* and *Diversification of Energy Mix and Location*, which are categorised in two different Global Themes,[9] and both emerge recurringly amongst participants' responses. A significant lure for South Africa's role in the SAPP is the power pool's potential to allow the state to tap into underutilised resources in the region, as well as to access growing global financing for renewables,[10] yet domestic contentions around the just energy transition and strong interests in fossil fuel extractivism complicate the state's policy engagement with the diversification opportunities of the SAPP.

Fourthly, this figure visualises this paper's correction of the state-centric limitations in the literature, by evidencing the role of non-state actors in considerations of South Africa's participation in the SAPP. Considering Southern African regional politico-economic instability, and the commercial inviability of the region's NPUs, the private sector and DFIs have become increasingly relevant, both domestically in South Africa

[9] *South African Domestic Factors* and *Institutional Characteristics of the SAPP*, respectively.
[10] For instance, participants mentioned South Africa's JETP and the increasing pressure to avoid funding high-carbon energy projects.

and in the globalising of regional energy projects like the Grand Inga Dam. For South Africa, foreign influence and the involvement of MNCs offer the opportunity to bankroll regional projects that may provide energy security down the line, but simultaneously those actors' engagements with South Africa's neighbours appear to dilute the state's control over regional affairs.

Finally, *Figure 7*'s visualisation helps us understand why the *Regional Political Dynamics* Global Theme emerged so prominently. Regional and global actors are interconnected to the SAPP and to each of the blue-boxed domestic actors, and many of those regional/global actors play significant roles in constituting the regional political dynamics explored in *Chapter 4*. For instance, discussions of the *Political Willpower for Regional Cooperation* Organising Theme mentioned the political weaknesses of the SADC, the challenge of facilitating cooperation across multiple neighbouring states in order to build HVDC transmission lines, difficulties in acquiring financing from DFIs and MNCs, and the SAPP's allowance for the Southern African private sector to attain membership as operating members. In *Figure 7*, each of these regional and global actors is directly or indirectly interconnected with Eskom and/or the South African state – the two key actors shaping South Africa's (non-)participation in the SAPP.

5.3 Finalising the Argument

Using thematic network analysis of the 22 elite and expert in-depth interviews, this paper has built an intricate picture of the political motivations explicating South Africa's participation in the SAPP. Though the analysis generated three Global Themes, the true

richness lies in the depth of data in the Organising and Basic Themes. The map of interactions earlier in this chapter depicts the complex web of interactions and co-constitution underlying regional powers' participation in their regional power pools. Wrapping all of this together generates my first argument in this paper:

> *The complex web of interactions explicating South Africa's participation in the SAPP can be represented by three interconnected groups of factors: the regional political dynamics in Southern Africa, the domestic factors in South Africa, and the institutional characteristics of the SAPP.*

This first argument underscores the importance of *each* of the thematic networks for explicating regional powers' participation in their power pools. None can be considered in isolation, but rather must be seen as contingent on the other groups of factors. Furthermore, this complex web of interactions depicts the theoretical significance of the concept of a 'regional power pool' for IR theory, as a type of regional organisation linking together different levels of analysis, actors, and political motivations. Additionally, it sheds light on the political motivations behind regional powers' participation in these regional organisations: though the macroeconomic expectations for regional energy integration suggest strong benefits to participation in regional power pools, my analysis demonstrates that it is insufficient to consider just these institutional characteristics of the SAPP. Rather, one must consider the broader picture across all three thematic networks to understand regional powers' cooperation, and doing so explicates why South Africa's participation in the SAPP has declined despite these macroeconomic expectations.

Next, I argue that, of these three thematic networks, *Regional Political Dynamics* are the most important. Not only does this Global Theme co-constitute the other two Global Themes, but it also features with by far the highest frequency in the thematic network analysis, and the map of interactions depicts how it is interconnected with most of the interactions relevant to South Africa's participation in the SAPP. This is contrary to the literature, which emphasises the importance of South Africa's domestic factors, and especially, its domestic electricity supply. Thus, my second argument is as follows:

> *Contrary to the literature's tendency to overemphasise South Africa's domestic electricity supply deficiencies, the regional political dynamics in Southern Africa are more important and co-constitute the other two groups of factors.*

Finally, my thematic network analysis identified key regional factors explicating South Africa's participation in the SAPP, which did not feature at all in the literature. The Organising Themes *Political Willpower for Regional Cooperation* and *Regional Project Financing and Complexity* emerged as the two most prominent factors amongst *Regional Political Dynamics*, yet did not feature in the literature's limited coverage of regional factors. Moreover, when we consider these regional factors in the context of *Figure 7*'s map of interactions between relevant actors, it is evident how they can co-constitute South African energy policy formation on one hand, and commercial considerations of participating in the SAPP on the other hand. Hence, my third argument in this paper is:

> *Key regional factors, including political willpower for regional cooperation and regional project financing, contextualise the political motivations for South Africa's energy policies and shape the commercial rationale for participating in regional power pools.*

This third argument highlights priority considerations for future policymaking, whether South African domestic energy policies, African continental energy integration policies, or global frameworks for mitigating climate change. Moreover, this contributes to IR theory on global cooperation under circumstances of scarce resources: academics theorising regional energy cooperation in areas of acute electricity supply deficiencies should still take into account how regional factors shape political motivations for cooperation, even in situations when states pursue energy individualism.

Chapter 6: Conclusion

This work has contributed to filling the research gap left by the literature's mere passing mentions of the political motivations for South Africa's participation in the SAPP, clarifying the research puzzle and making conceptual, theoretical, empirical, and policy contributions to the discipline of IR. In order to rectify to the lack of primary source-based methodological rigour in the literature, this paper has analysed 22 in-depth interviews of elite and expert Southern African participants, whose experiences contributed rich data towards explicating South Africa's participation in the SAPP. The thematic network analysis of these data generated an intricate network of three Global Themes, 20 Organising Themes, and 162 Basic Themes, on which I drew to map the interactions of actors relevant to the research question.

Ultimately, I have argued that South Africa's participation in the SAPP can be explicated as a complex web of interactions between three interconnected groups of factors: regional political dynamics in Southern Africa, South African domestic factors, and the institutional characteristics of the SAPP. Whilst the literature suggests that domestic electricity supply deficiencies are the overriding factor, I have argued that regional political dynamics are more important and co-constitute the other two groups of factors. Lastly, I have demonstrated that regional factors, such as political willpower for regional cooperation and regional project financing, contextualise the political motivations for South Africa's energy policies and the commercial rationale for participating in the SAPP.

This paper's depth of analysis and understanding helps to fill the lack of theorising and data on this topic, laying the foundations for further research on African regional powers and regional energy integration. The final two sections of this paper discuss this topic in comparative perspective and reflect on limitations and further avenues for research.

6.1 Regional Energy Integration in Comparative Perspective

This research aims to understand the political motivations behind regional powers' participation in regional power pools. Its theory-building occurs via *transferability* from case to case, where similar characteristics exist, but without assuming the completeness or primacy of theory, since the world is only ever partially knowable.[1] The value of this contextualised knowledge should be assessed by its users, who would decide for themselves the extent to which it fits their context.[2] Therefore, there may be transferability of my argument and themes to other cases where researchers interpret that regions display similar characteristics to the SADC, and its regional power, South Africa. One factor in my casing process in *Chapter 3* was strategic choice to maximise the transferability potential of theory.[3]

[1] Martin Bauer and George Gaskell, *Qualitative Researching with Text, Image and Sound* (London: Sage, 2000); Onuf, *World of Our Making*; Braun and Clarke, *Thematic Analysis*.
[2] Schwartz-Shea and Yanow, *Interpretive Research Design*; Braun and Clarke, *Thematic Analysis*.
[3] Ruffa, 'Case Study Methods.'

The table of African regional power pools,[4] which I compiled for my casing process, is useful for providing preliminary suggestions of transferability. Though no other power pools have a competitive energy market like the SAPP (yet), three others focus on energy interconnection programmes, of which the EAPP is the only pool of comparable approximate capacity (and notably, enjoys a net electricity surplus). The EAPP has an active regional power, Ethiopia, but a former member of the pool, Egypt, resists Ethiopia's expansions in the region. I suggest that it may be possible to transfer the insights of this paper to understand Ethiopia's participation in the EAPP. In the WAPP, meanwhile, Nigeria's role has been negligible despite its economic dominance in the ECOWAS. The WAPP has a similar number of member states to the SAPP, yet is significantly less developed. Again, I suggest that it may be possible to transfer these insights to understand Nigeria's participation in the WAPP.

Beyond the continent, there is value in investigating the comparability of other regional power pools (and 'power exchanges'). I recommend caution regarding the transferability of this research to Western power pools, such as the EU electricity market, the Nord Pool, or the US' Eastern/Western Interconnections, which have significant contextual differences beyond the differences noted in the African regional power pools.

The in-depth analyses in this research would be useful for future policy formation. Several participants mentioned the relevance of South Africa's participation in the SAPP for continental integration policymaking, in the *Interconnection with the Rest of Africa*

[4] Available in Appendix A.

Organising Theme, whilst the *Domestic and Foreign Energy Policies* Organising Theme was one of the most frequent to arise, suggesting that there are significant policy implications domestically in South Africa too.

6.2 Reflections

Heterodox GPE emphasises that theory cannot be separated from practice, and thus research is a co-construction of knowledge where the researcher *learns from* (rather than 'tests on') participants.[5] Thus, limitations of this paper's methods were addressed throughout *Chapter 3*, whilst reflexivity was built into the analysis[6] – indeed, into the methodology itself.

Nevertheless, it is worth revisiting some limitations of the methods, for the sake of recommending two avenues of future research. Firstly, single case studies are inadequate methods for establishing whether empirical regularities exist across cases.[7] This is a compromise I made intentionally, as my focus is on specificity and situated complexity. Nonetheless, I recommend that future research complements this work with quantitative or mixed-methods analyses. I intend on doing so in my upcoming DPhil in IR, for which I have proposed the use of mixed methods, including quantitative sentiment analysis of regional powers' government officials' online commentary on regional energy integration and power pools.

[5] Cox, 'Social Forces, States and World Orders.'; Kurowska and Bliesemann de Guevara, 'Interpretive Approaches in Political Science and IR.'; Virginia Braun and Victoria Clarke, 'One Size Fits All?,' *Qualitative Research in Psychology* 18, no. 3 (2021).

[6] See, for instance, Phase 4 of Appendix I.

[7] Gerring, *Case Study Research*.

Secondly, an indirect consequence of the focus on South Africa's role as the regional power in the SAPP was the inability to dedicate thorough individual attention to the other SADC states. Though I comprehensively explored regional political dynamics, and my interview participants included officials from multiple SADC states, I remain concerned that a focus on regional powers may implicitly reduce the agency of neighbouring states. I therefore recommend that further research analyses neighbouring states' influence on the participation of the regional power in their regional power pool.

Ultimately, this paper has unmasked an important type of regional organisation, hitherto neglected in IR literature. This lays the foundations for a host of new research avenues, exploring the complex web of interactions that I have mapped to contextualise African regional energy integration.

Appendices

A. African Regional Power Pools[1]

Regional Power Pool	*Founding Year*	*Mandate*	*Members*	*Approximate Capacity*	*Regional Powers' Influence*
Comité Maghrébin de l'Électricité (Maghreb Electricity Committee/North African Power Pool) (COMEC)	1974 (all five members by 1989)	Study issues faced by member states; share best practice; shared electricity market by 2025	UMA member states (5/5)	43 000MW (currently no shared power)	None significant; minor influence from Algeria
Eastern Africa Power Pool (EAPP)	2005	Energy interconnection programmes	COMESA member states (11/19) (Egypt resigned in 2016)	68 000MW (energy surplus)	Ethiopia dominates the EAPP, but largely engages in bilateral trade agreements; Egypt resists Ethiopia and blocks the EAPP agenda
Pool Energétique de l'Afrique Centrale (PEAC) (Central African Power Pool)	2003	Energy interconnection programmes	ECCAS member states (10/11)	12 000MW	None significant; DRC has potential for regional influence
Southern African Power Pool (SAPP)	1995	Energy interconnection programmes	SADC member states (12/16) + private operating members and a market participant	81 000MW	South Africa 'championed' early efforts of the SAPP; its role has since waned but still major player (80% of production)
West African Power Pool (WAPP)	2001	Energy interconnection programmes	ECOWAS member states (14/15)	22 000MW	No energy 'champion'; Ghana and Ivory Coast drive regional energy integration

[1] Data extracted/adapted from IRENA, *SAPP: Planning & Prospects for Renewable Energy*; Bruszt and Palestini, 'Regional Development Governance.'; ICA, *Updated Regional Power Status in Africa Power Pools*; Woolfrey, *The Political Economy of Regional Integration in Africa: COMESA*; USAID, *Power Africa Transmission Roadmap to 2030*; Medinilla, Byiers, and Karaki, *African Power Pools*; Odetayo and Walsh, 'A Policy Perspective for an Integrated RPP within the AfCFTA.'; USAID, 'Where We Work,' (2021). https://www.usaid.gov/powerafrica/wherewework

B. SAPP Membership (as of April 2022)[2]

State	*Full Name of Utility*	*Abbreviation*
Angola	*Rede Nacional de Transporte de Electricidade*	RNT
Botswana	Botswana Power Corporation	BPC
DRC	*Société Nationale d'Électricité*	SNEL
Lesotho	Lesotho Electricity Corporation	LEC
Malawi	Electricity Supply Corporation of Malawi	ESCOM
Mozambique	*Electricidade de Moçambique*	EDM
Mozambique	*Hidroeléctrica de Cahora Bassa**	HCB
Mozambique	Mozambique Transmission Company*	MOTRACO
Namibia	NamPower	NamPower
South Africa	Eskom	Eskom
Swaziland	eSwatini Electricity Company	EEC
Tanzania	Tanzania Electricity Supply Company Ltd	TANESCO
Zambia	Copperbelt Energy Cooperation*	CEC
Zambia	GreenCo Power Services Ltd**	GreenCo
Zambia	Lunsemfwa Hydro Power Company*	LHPC
Zambia	Ndola Energy Corporation*	Ndola
Zambia	Zambia Electricity Supply Corporation Limited	ZESCO
Zimbabwe	Zimbabwe Electricity Supply Authority	ZESA

** Operating Member*
*** Market Participant*

[2] Mbuseli, 'Southern African Power Pool.'

C. SAPP Demand & Supply (as of March 2021)[3]

State	*Utility*	*Installed Capacity*	*Operating Capacity*	*Current Peak Demand*	*Excess /Shortfall*
Angola*	RNT	5,878	4,877	2,687	2,190
Botswana	BPC	892	322	675	-353
DRC	SNEL	2,879	2,769	1,705	1,064
eSwatini	EEC	71	65	259	-194
Lesotho	LEC	74	70	173	-103
Malawi*	ESCOM	506	330	380	-50
Mozambique	EDM/HCB/ MOTRACO	2,796	2,642	2,240	402
Namibia	NamPower	624	390	695	-306
South Africa	Eskom	60,326	48,215	40,256	7,959
Tanzania*	TANESCO	1,574	1,382	1,382	0
Zambia	ZESCO/ CEC/LHPC/ Ndola	2,891	2,736	2,887	-151
Zimbabwe	ZESA	2,421	1,400	1,896	-496
	Total	**80,923**	**65,198**	**55,235**	**9,963**
	Total (Interconnected)	**72,966**	**58,609**	**50,786**	**7,823**

* Non-operating members
Note 1: Units in MW.
Note 2: Available capacity is also dependent on plant breakdowns and maintenance plans.
Note 3: Demand includes 'reserves'.

[3] SAPP, *SAPP Annual Report 2021*.

D. Anonymised Interview Record

ID	*Date*	*Length*	*Mode*	*Department/Company/Organisation*	*Category*
A	10-Jan	90	In-Person	Eskom Africa, Transmission & Generation; SAPP-CC Board	**Elite**
B	10-Jan	45	In-Person	Eskom EXCO; USAID; Deloitte	**Elite**
C	10-Jan	105	In-Person	Ernst & Young SA Leadership Team; Macquarie; KPMG	Expert
D	18-Jan	51	Online; no audio	'Significant Independent Power Producer'	Expert
E	18-Jan	33	Online	Eskom Transmission & Operations EXCOs; SAPP Management Committee & CC Board; USAID	**Elite**
F	18-Jan	62	Online	Power Shift Africa	Expert
G	19-Jan	38	Online	Copperbelt Energy Corporation	Expert
H	19-Jan	47	Online	Carbon Limits; UCT; UN Framework Convention on Climate Change	Expert
I	23-Jan	95	Online	RERA EXCO	**Elite**
J	23-Jan	53	Online	AfDB Power, Energy, Climate & Green Growth (PEVP) Complex	Expert
K	24-Jan	37	Online	SAPP-CC & Markets Sub-Committee	Expert
L	24-Jan	32	Online	Mohesh Partners; Evolution Africa Capital	Expert
M	25-Jan	29	Online	Ministerial Advisory Council on Energy; Eskom Advisory Panel; National Planning Commission; NERSA Board	**Elite**
N	25-Jan	47	Online	SAPP-CC Board; NamPower; ZESA	**Elite**
O	25-Jan	39	Online	Eskom International Trade	Expert

P	25-Jan	29	Online	World Energy Council; Deloitte; Eskom	Expert
Q	26-Jan	49	Online	Fawkes & Associates; Eskom Academy of Learning	Expert
R	26-Jan	31	Online	UCT Energy Research Centre; IRENA	Expert
S	30-Jan	46	Online; no audio	Eskom International Trade; SAPP Markets Sub-Committee	Expert
T	31-Jan	34	Online	Eskom; SAPP	Expert
U	01-Feb	36	Online	DMRE	Expert
V	17-Feb	39	Online	Eskom EXCO; Babcock International	**Elite**

Note 1: Many individuals interviewed have held positions at multiple different organisations/companies/ departments over the course of their careers, including some joint positions. Only those most relevant to my research are listed here, as per the Participant Information Sheet.
Note 2: The two participants with 'no audio' requested for their interviews not to be audio-recorded. They both still consented to my notetaking during their interviews.

E. Participant Recruitment Email Template

Email subject line: Master's Thesis Interview: South Africa in the SAPP

Dear [POTENTIAL PARTICIPANT NAME],

I hope this email finds you well. My name is Daniel Tate, and I am a South African student doing my Master's in International Relations at the University of Oxford. [MENTION ANY REFERRAL HERE]. I am passionate about improving regional energy integration in Southern Africa, and so for my Master's thesis, I am researching South Africa's participation in the Southern African Power Pool (SAPP). Given your work with [NAME OF ORGANISATION/DEPARTMENT/ COMPANY], I would be interested in interviewing you about the topic, and am wondering whether you would be open to a 30-45-minute interview?

[IN-PERSON:]

I will be in Johannesburg/Pretoria for the 9th-13th January 2023, if any day in that week would work for an in-person interview. If that would not work, I could also do an online interview at any point in the final two weeks of January.

[ONLINE:]

If so, I would like to suggest an online interview sometime in the final two weeks of January? I am happy to be flexible as per your schedule.

A little more information about my project: I am investigating the reasons why South Africa does or does not leverage its regional power towards regional energy integration, via the Southern African Power Pool. I am puzzled by South Africa's patterns of participation in the regional power pool, given the intermittent loadshedding we have experienced for more than a decade. Thus, I am conducting interviews with about 25 individuals across the energy sector in South Africa, regional and international organisations, and academics/experts with expertise on the matter. Interviewees would be kept anonymous and only the [ORGANISATION/DEPARTMENT/COMPANY] of which they are part would be mentioned in the output of my research.

Please do let me know if you would be interested in taking part in this interview, and I can send you a full information sheet about the interview, as well as schedule in a date that suits you.

Kind regards,

Daniel

Daniel Tate

Master's Student in International Relations

University of Oxford

E: daniel.tate@politics.ox.ac.uk

W: politics.ox.ac.uk/person/daniel-tate

F. Research Ethics Approval



Department of Politics & International Relations

University of Oxford, Manor Road, Oxford OX1 3UQ
United Kingdom
Tel: +44 1865 278700
Fax: +44 1865 278725
Email: enquiries@politics.ox.ac.uk
www.politics.ox.ac.uk

Daniel Tate,
University,
Oxford

9 December 2022

Dear Daniel,

Research Ethics Approval: Ref No.: SSH_DPIR_C1A_22_065

The Political Economy of Regional Energy Integration: South Africa in the Southern African Power Pool

The above application has been considered on behalf of the DPIR Departmental Research Ethics Committee (DREC) in accordance with the procedures laid down by the University for ethical approval of all research involving human participants.

I am pleased to inform you that, on the basis of the information provided to the DREC, the proposed research has been judged as meeting appropriate ethical standards, and accordingly approval has been granted.

Should there be any subsequent changes to the project, which raise ethical issues not covered in the original application, you should submit details to the DREC for consideration.

Yours sincerely,

A. Melling

Andrew Melling,
Secretary to the DPIR DREC

cc. Ricardo Soares de Oliveira

G. Participant Information Sheet

Daniel Tate
Department of Politics & International Relations
University of Oxford
daniel.tate@politics.ox.ac.uk
Supervisor: Prof Ricardo Soares de Oliveira

South Africa in the Southern African Power Pool

PARTICIPANT INFORMATION SHEET

Central University Research Ethics Committee Approval Ref: **SSH_DPIR_C1A_22_065**

1. Introduction

You are being invited to take part in a research project. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully. Let me know if there is anything that is not clear or if you would like more information. On the day of the interview, I will briefly summarise the below information and ask for your verbal consent to proceed with the interview.

2. Why is this research being conducted?

For my Master's degree thesis, I am researching South Africa's engagement with the Southern African Power Pool (SAPP). More specifically, I am investigating the reasons why South Africa leverages and does not leverage its regional power towards regional energy integration via the SAPP. This is an important matter for sustainable and inclusive development, as well as energy security in the Southern African region.

3. Why have I been invited to take part?

I am interviewing various stakeholders to the energy sector in South Africa, including public, private, and non-governmental actors. In addition, I am interviewing a number of regional and international officials and academics familiar with the matter. The total number of interviews will be approximately 25. I would value your perspective on South Africa's current energy situation, and its reasons for (not) engaging with the SAPP.

4. Do I have to take part?

No. It is up to you to decide whether to take part. You can withdraw yourself from the study, without giving a reason, and without negative consequences, by advising me of this decision, either by email before the interview, or verbally during the interview. After the interview has been completed, you can still reach out to me to withdraw any information you have contributed to the research, as long as it is before the deadline for the submission of my thesis (24th April 2023). Such data would then be removed from my research and securely destroyed.

5. What will happen to me if I take part in the research?

I will ask you a number of questions about the topic mentioned above, in an informal and conversational setting. You can ask to pause or stop the interview at any time. I will ask for your oral consent to take part in this research at the start of the interview.

With your consent, I would like to record the audio of our interview, so I can have an accurate record of the conversation. This audio recording would be stored securely, and only my supervisor and I would have access to this audio recording and its transcript. With your permission, I would also take notes during the interview, which would be stored securely too. You would be anonymised in the transcription, my notes, and any mentions of your contribution in my thesis. This means that any personal information that could directly identify you as an individual would be removed. The only information that would be stored about you is your employment relevant to my topic (department/company/organisation/organisation/ academic institution), the method by which I got in contact with you, and the city location of our interview (unless online). Of these, only the first would be mentioned in the output of the research, without any gendered pronouns.

6. What are the possible disadvantages and risks in taking part?

I am not aware of any possible disadvantages or risks in taking part in this interview. As mentioned, the record and notes of your interview would be stored securely and anonymously, and mentions of your contribution in my thesis would not be identifiable to you. If you have any concerns about this interview, please do let me know and I will try to mitigate them wherever possible.

7. Are there any benefits in taking part?

While there are no immediate benefits for those people participating in this project, I hope that this research will lead to better understanding of South Africa's cooperation with the region towards energy security and sustainable, inclusive development, which may in turn improve the livelihood of people in South Africa, Southern Africa and possibly even elsewhere.

8. What information will be collected and why is the collection of this information relevant for achieving the research objectives?

I would like to use the contributions from your interview in my research on the topic of my thesis. Your contributions will be valuable for understanding the reasons for South Africa's (non-)engagement with the SAPP.

As per UK and University of Oxford policy requirements, the record and notes of your interview would be stored securely for three years after the publication of my thesis (i.e. until June 2026), at which point they would be securely destroyed. However, if I am accepted to do a Doctoral degree next year (DPhil in International Relations at the University of Oxford), then I would like to continue using your data for my further research on the topic. This would mean that the record and notes of your interview would be stored securely for three years after the publication of my *doctoral* thesis (i.e. until August 2028), at which point they would be securely destroyed.

I would like to retain your contact details in case I continue to research this topic in my PhD, at which point I would be interested in reaching out to you to see if you would be open to contributing further to this research. Your contact details would be stored securely and anonymously. You are welcome to opt out of this if you would like.

9. Will the research be published? Could I be identified from any publications or other research outputs?

The findings from the research will be written up for my Master's degree thesis, and potentially my Doctoral thesis. These theses are published online in the University of Oxford's Bodleian Libraries catalogues, and a copy of my thesis will be deposited online in the University of Oxford Research Archive; they will be publicly available to facilitate use in future research. There is currently no intention to publish the results in an academic journal; if this changes, I

would write to you to ask for your renewed consent to do so. As mentioned above, you will not be identifiable from the outputs of this research. I would like to ask your permission to use direct quotations (without identifying you).

10. Data protection

The University of Oxford is the data controller with respect to your personal data, and as such will determine how your personal data is used in the study. The University will process your personal data for the purpose of the research outlined above. Research is a task that is performed in the public interest. Further information about your rights with respect to your personal data is available here.

11. Who has reviewed this study?

This study has received ethics approval from a subcommittee of the University of Oxford Central University Research Ethics Committee (ethics reference: **SSH_DPIR_C1A_22_065)**.

12. Who do I contact if I have a concern about the research?

If you have a concern about any aspect of this study, please contact me, Daniel Tate, (daniel.tate@politics.ox.ac.uk) in the first instance. Alternatively, you can contact my supervisor, Prof Ricardo Soares de Oliveira (ricardo.soaresdeoliveira@politics.ox.ac.uk). We will do our best to answer your query. We will acknowledge your concern within 10 working days and give you an indication of how it will be handled. If you remain unhappy or wish to make a formal complaint, please contact the Chair of the below Research Ethics Committee at the University of Oxford, who will seek to resolve the matter as soon as possible:

Prof Edward Keene

Co-Chair, Department of Politics & International Relations Departmental Research Ethics Committee

University of Oxford, Oxford, Oxford, Oxfordshire, United Kingdom, OX1 3UQ.

Email: edward.keene@chch.ox.ac.uk

13. Further information and contact details

If you would like to discuss the research with someone beforehand (or if you have questions afterwards), please contact:

Daniel Tate

Department of Politics & International Relations

University of Oxford

University email: daniel.tate@politics.ox.ac.uk

H. Interview Topic Guide

Semi-structured interview technique:

- *Adapt the phrasing of questions.*
- *Adapt the order of questions.*
- *Ask some sub-questions and do not ask others.*

These choices depend on:

- *Participant's background and potential value to project.*
- *Extent to which participant is forthcoming with their responses.*
- *Progress in prior interviews, emphasising any topics that remain in doubt/questions where information is lacking.*
- *Contextualising responses in the preliminary theorising.*
- *Participant's time available for the interview.*

Take note of non-verbal communications and time-reference key statements.

Introductions

- Brief introduction to me:
    - Emphasise researcher status.
    - Emphasise South African identity.
    - Emphasise any institutions/organisations in common, e.g. UCT.
- Brief introduction to my research:
    - Ensure participants understand the project in which they are participating.
    - Present least-threatening framing of my research, emphasising academia.

    - Adjust technical language according to participant's background and 'elite' status.
    - Avoid specific mention of research question, whilst hinting at research puzzle.
- Participant's value for my research:
    - Mention any referrals.
    - Describe why participant's views would be of value to my project.
    - Demonstrate knowledge about participant's impact and career.
- Contextualise participant's participation in my research:
    - Number of interviews conducted.
    - Spread of actors interviewed.

Verbal Consent

- **Interview description**: I will have a brief conversation with you where I will ask a range of questions about South Africa's participation in the SAPP.
- **Data sharing/access/confidentiality**: The answers you give will form the basis of my Master's thesis publication. I will have access to the record and notes of our conversation, as will my supervisor.
- **Data storage**: I will store your data safely, anonymously, and confidentially, and will keep the research data for 3 years after publication. I would like to be able to use your de-identified data in my Doctoral studies after my Master's degree has concluded.

- **Audio recording**: With your permission, I would like to make an audio recording of our discussion to make sure I'm getting an accurate record of the interview. I would also like to take notes during the interview.
- **Keeping contact details:** I would also like your permission to keep your contact details so that I can re-contact you to clarify information you gave me in your interview, as well as to reach out to you for further contributions for my Doctoral studies, if you would be interested.
- **How identifiable you will be**: Any information directly identifying you will be removed. The only indirectly identifiable information stored securely will be your employment in relation to my topic, the way in which I contacted you, and the city location of our interview (unless online). Of those, only the first would be included in the output of my research.
- **Risks**: I am not aware of any significant risks associated with partaking in this interview, but please let me know if you have any concerns/considerations.
- **Rights**: You do not have to take part, you can ask me any questions you want before or throughout, and you can withdraw at any stage of the interview without giving a reason. After the interview, you can withdraw your information until 24th April 2023, when my Master's thesis will be submitted.
- **Publication plans**: The project will be published in my Master's thesis, and potentially my Doctoral thesis. A copy of my thesis will be deposited online in the University of Oxford's research archives.
- **Complaints/ concerns procedure**: If you have any complaints or concerns, please feel free to contact me. My email address is daniel.tate@politics.ox.ac.uk.

Alternatively, you can contact my supervisor, Prof Ricardo Soares de Oliveira, at ricardo.soaresdeoliveira@politics.ox.ac.uk.

- **Ethics review details**: This research project has been reviewed and approved by a University of Oxford ethics committee. The ethics reference is [**SSH_DPIR_C1A_22_065**]. If, after contacting me/my supervisor with any concern, you still wish to make a complaint, please contact the Co-Chair of my Departmental Research Ethics Committee, Prof Edward Keene, at edward.keene@chch.ox.ac.uk.
- **Data Protection statement**: The University of Oxford is responsible overall for ensuring the safe and proper use of any personal information you provide, solely for research purposes. Further information about your rights to information you provide is available on the University's data protection website.
- **Questions/concerns**:
    - Do you have any questions?
    - Do you give your permission for me to interview you, with/without audio recording and notes?
    - Do you give permission for me to re-contact you to clarify information?
    - Do you give me permission to quote you directly (without identifying you)?

Start recording if consent has been given. Start taking notes if consent has been given to do so. End interview if no consent has been given.

Open-Ended Questions

Broad, indirect questions inviting elaborating around the topic and probing the extent to which participant is forthcoming with their answers.

Include prompts to follow-up where answers are unsubstantial.

- Could you give me a short introduction to yourself?
    - How did you come to occupy your current/former role [refer to role(s) relevant to my research]?
    - Would you be able to summarise the kinds of projects/ activities in which you are involved? [mention existing knowledge of their work]
- What is your general impression of the state of the SADC's regional integration?
- How would you describe South Africa's policy towards its neighbours in the region?
- Why do you think countries in Southern Africa have typically developed their power sectors in isolation?
- Is it in the SADC members' interests to upscale their regional energy trade?

Main Questions

Remain indirect if participant is forthcoming; probe slightly more directly if not forthcoming.

Tactfully challenge answers where appropriate, including use of counterfactuals or 'playing devil's advocate'.

Utilise presupposition questions to signal willingness to talk about sensitive matters.

- **General thoughts about the SAPP**:
    - Is the SAPP a useful mechanism for regional energy integration?
    - To what extent has the SAPP achieved its vision to be a 'fully integrated, competitive energy market and provider of sustainable energy solutions for the SADC region and beyond'?
    - How does the SAPP compare to other regional power pools?
    - How is the functioning of the SAPP affected by the low pricing of electricity in the Southern African region?
    - How is the financial viability/business case of infrastructure projects (whether generation, transmission, or distribution) affected when negotiations are done at a regional level?
    - How do you perceive the collaborative relationship between the SAPP and the RERA?
- **Actors in the SAPP**:
    - What are the implications of having states' electric power utilities as the direct stakeholders of the SAPP?
    - How influential are the SADC governments over the SAPP?
    - How should we perceive the increasing role of private actors in the SAPP?
- **SA's participation in the SAPP**:
    - Is it in South Africa's interest to participate in the SAPP?
    - How is this participation affected by the significant developmental asymmetry between South Africa/Eskom and its SADC neighbours?
    - To what extent has South Africa's (non-)participation impacted the SAPP's functioning and development?

  - Do you think South Africa holds significant influence over energy integration in the region?
    - To what extent would South Africa's involvement affect the mobilisation of financing for energy infrastructure?
    - To what extent is South Africa a leader/norm-setter in the region?
  - Is there a business case for South Africa investing in energy infrastructure in its neighbouring SADC states?
  - How influential is the role of the NERSA within the RERA?

- **Reasons for this (non-)participation**:
  - Do you see this as a cooperation matter at the regional level?
  - Are there global influences boosting/hindering participation?
  - Is this more of a domestic energy supply matter within South Africa?
  - How do political factors within South Africa interact with its participation in the SAPP?
  - To what extent is South Africa's participation affected by the structure of the SAPP itself?

- **The potential for a 'just energy transition'**:
  - Are you hopeful about the potential for a just energy transition, in South Africa and Southern Africa at large?
  - Is the regional market/the SAPP relevant for such a transition?
  - How does the inclusion of renewables in the region's energy mix affect its potential for attracting global financing?
  - How are the improvements in energy technology affecting the dynamics of regional cooperation?

Concluding Questions

Return to more open-ended, 'cool-down' questions.

End on positive note with more relaxed demeanour.

- Within the broader context of the region's history, is Southern Africa following the development path you would have expected?
- Which major issues you would ask a researcher in my position to investigate?
- Do you have any questions for me?

Closing

- Thank participant for the interview and their detailed responses.
- Remind participant of my contact details should they wish to contact me about any aspect of the interview and/or their consent.
- Confirm whether participant would be available for further questions.
- Ask participant for suggestions about other potential interview participants.
- Ask participant to send me any relevant materials that could be of use for my research.

Stop recording and end interview.

Populate interview record spreadsheet with time of beginning/end of interview, any referrals/recommendations, any suggested texts.

Review interview notes and add extra notes from memory, including general reflections on interview.

Follow-up via email on any outstanding matters.

I. Phases of the Thematic Network Analysis[4]

Phase	*Task*	*Description*	*Usage of NVivo*
1	Data familiarisation	Immersion into the data, with active reading, coding salient features, and memoing; annotate non-verbal data	Memos; annotations; mind maps
2	Systematic data coding	Interpret interview transcripts into more manageable (but still meaningful) codes	Open coding; memos; text search
3	Generation of themes	Collate and abstract codes into initial themes, according to salient or common content	Codebook; list view; mind maps; concept maps; memos
4	Reviewing of themes	Compare initial themes with actual text in the dataset and theoretical framework; check for consistent patterns; write up analytical reflexive memos; refine into Basic Themes	Codebook; coding stripes; coding comparison queries; memos
5	Construction of the thematic networks	Arrange Basic Themes into similar, coherent groupings under Organising Themes; then similarly generate Global Themes from Organising Themes; write up memos specifically dedicated to linkages between the themes; illustrate as thematic networks	Codebook; mind maps; concept maps; memos
6	Exploration of thematic networks	Explore contents of each network; note underlying patterns; provide supporting text segments	Codebook; memos; charts; mind maps; concept maps; lexical queries

[4] Attride-Stirling, 'Thematic Networks.'; Braun and Clarke, 'One Size Fits All?.'; Ben Meehan, 'Thematic Analysis Using NVivo' (paper presented at the NVivo Research Network, Online, 2022).

7	Discussion of overall picture	Summarise thematic networks; analyse and interpret patterns; discuss with reference to research questions and literature/theorising	N/A

J. Codebook: From Basic to Organising Themes

Basic Themes	*Issues Discussed*	*Organising Themes*
Appeasing foreign powers Energy security Financing energy transitions Inward-looking policies Just Energy Transition Partnerships Natural resource security Regional project financing	- Foreign investment in energy infrastructure and projects - Foreign powers ensuring their energy and resource security - Foreign influences preventing African intra-regional energy cooperation - Energy transition towards renewables influencing availability of finance for fossil fuel-sourced energies	**Foreign relations and foreign influence**
Direct Current lines Energy supply deficiencies Micro-grids SA's significant energy demand SADC region's drought Transmission infrastructure deficiencies	- Lack of neighbouring states' generation capacity or availability - Lack of neighbouring states' supply reliability - Lack of regional transmission infrastructure - Small amounts of power available on the SAPP grid - Need for High-Voltage Direct Current transmission lines for long distances	**Lack of neighbouring states' energy supply and transmission infrastructure**
Inward-looking policies National self-sufficiency Ownership Regional authority Sovereignty	- Politicians' mindsets of national self-sufficiency - Protecting states' sovereignty - Inward-looking energy policies - Hesitancy to cede authority to regional organisations	**Mindsets of national self-sufficiency and guarding sovereignty**
Financing Government backing Intuition; vision Optimisation Political willpower; courage Powers that be Private interests Regional cooperation Trust Weak SADC	- Need for more political willpower behind energy integration projects - Weak Regional Economic Community (the SADC) - Importance of trust - SA's unwillingness to partner with neighbouring states - Decision-making courage and political entrepreneurs - Dominance of domestic fossil-fuel industries	**Political willpower for regional cooperation**

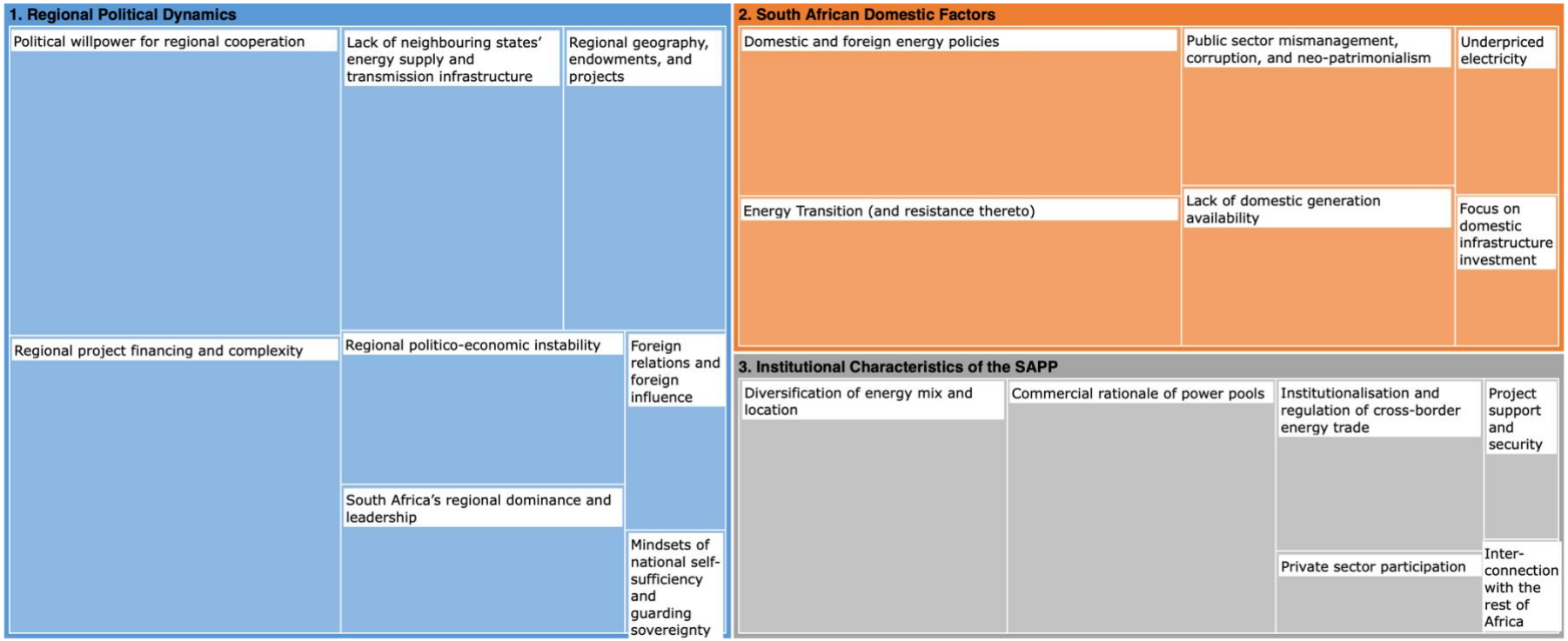
Direct Current lines Economies of scale Expansive landscape Natural resource endowments Regional optimisation Regional project potential Rural areas	- Expansive and diverse regional geography - Highly favourable regional natural resources endowments - Useful regional projects (extant or planned) - New energy technology - Need for High-Voltage Direct Current transmission lines	**Regional geography, endowments, and projects**
Climate change effects Commercial inviability Corruption Destabilisation Financing Grand Inga Dam Political agendas Political instability Risk profile	- Regional political instability complicating energy projects - Weak economies and commercially inviable utilities - Corruption and neo-patrimonialism - Destabilisation without SA's energy supply - Exploitation of utilities for political means - Uncertainty and risk hindering project financing	**Regional politico-economic instability**
Access to capital Bankability Bilaterals Cost-reflective tariffs Credible counterparties Development Finance Institutions Financial sustainability Offtaker Power Purchase Agreements Project management Risk	- Preferences for long-term bilaterals and Power Purchase Agreements - Concerns of risk and bankability - Electricity tariffs are underpriced and non-cost-reflective - Lack of access to capital - Complexities of project development and management	**Regional project financing and complexity**
'Big Brother' Dependency on SA Dominance Expertise-sharing Paternalism Regional leadership SA's credibility and finance	- Neighbouring states' dependency on SA - Hesitancy regarding SA's regional leadership - National interests and paternalism influencing SA's regional policies - Importance of SA's credibility and access to finance	**South Africa's regional dominance and leadership**
Baseload Contractual obligations	- Restrictive and outdated domestic energy policies	**Domestic and foreign energy**

Integrated Resource Plan Lip-service Outdated policy Political willpower Private sector participation Regional project potential Restrictive energy policy Risk Technological advancements Underpriced electricity	- Lack of awareness of potential of regional projects - Concerns of risk; preferences for long-term bilateral contracts - Foreign policy lip-service and appeasement - Increasing private sector participation	**policies**
Baseload Coal fundamentalism Diversification of energy mix Double standards Employment protection Financing Independent Power Producers Just energy transition Micro-grids Renewables Transition fuels Unions Variability of energy supply	- Politics of a 'just' energy transition - Resistance to energy transitions and the West's double standards - Coal fundamentalism and profit-seeking - Variability of renewable energies and need for 'baseload' - Private sector participation in renewable energy generation	**Energy transition (and resistance thereto)**
Grid capacity Inward-looking policy Loadshedding Power plant maintenance Transmission infrastructure	- Policy priority of domestic energy infrastructure - Capital spending on transmission infrastructure - Overdue power plant maintenance - Lack of grid capacity for new generation	**Focus on domestic infrastructure investment**
Availability factor Electricity supply deficiencies Loadshedding Outdated institutional model Power plant breakdowns Power plant maintenance Private sector participation Regional project potential SAPP imports	- Loadshedding caused by frequent power plant breakdown - Lack of planned maintenance of power plants over extended period of time - Involvement of private sector in electricity generation - Increasing desire to import from the region	**Lack of domestic generation availability**
Corruption Government bureaucracy Individual interests Inefficiency Political interference Private sector participation	- Public sector bureaucracy, inefficiency, and mismanagement - Public sector corruption and neo-patrimonialism - Individual interests of	**Public sector mismanagement, corruption, and neo-patrimonialism**

Underpriced electricity	politicians - Electricity tariffs held at non-cost-reflective rates - Increasing role of private sector	
Cost-reflective tariffs Debt Energy access Expensive SAPP rates Tariff regulation Under-recovery	- Electricity tariffs held at non-cost-reflective rates - Energy access and equity considerations in electricity-pricing - Debt incurred from subsidising electricity tariffs and non-payment of bills - Relative non-competitiveness of regional market	**Underpriced electricity**
'Business case' Economic efficiency Energy access Energy mix diversification Financing Interconnection Investors Market structure Regional energy trading Regional integration Regional optimisation	- Considerations of the 'business case' of investing in regional power pools - Economies of scale, economic efficiency, and diversification of energy supply through regional energy trading - Market demand serving as the contract 'guarantor' instead of long-term contracts with offtakers - Regional power pools contributing to filling states' domestic shortfalls in energy supply	**Commercial rationale of power pools**
Baseload Climate change effects Coal fundamentalism Energy mix diversification Energy transition Natural resource endowments Regional optimisation Renewables Sustainable development Technology advancements Transition fuels Variability of energy supply	- Energy transition towards renewables - Significant regional natural resource endowments - Diversification of energy mix and optimisation of regional supply - Resistance to energy transition and significant regional fossil fuel endowments	**Diversification of energy mix and location**
Capacity-building Cross-border oversight Frameworks Information-sharing	- Institutionalisation of regional energy trade operations - Regulation and	**Institutionalisation and regulation of cross-border energy trade**

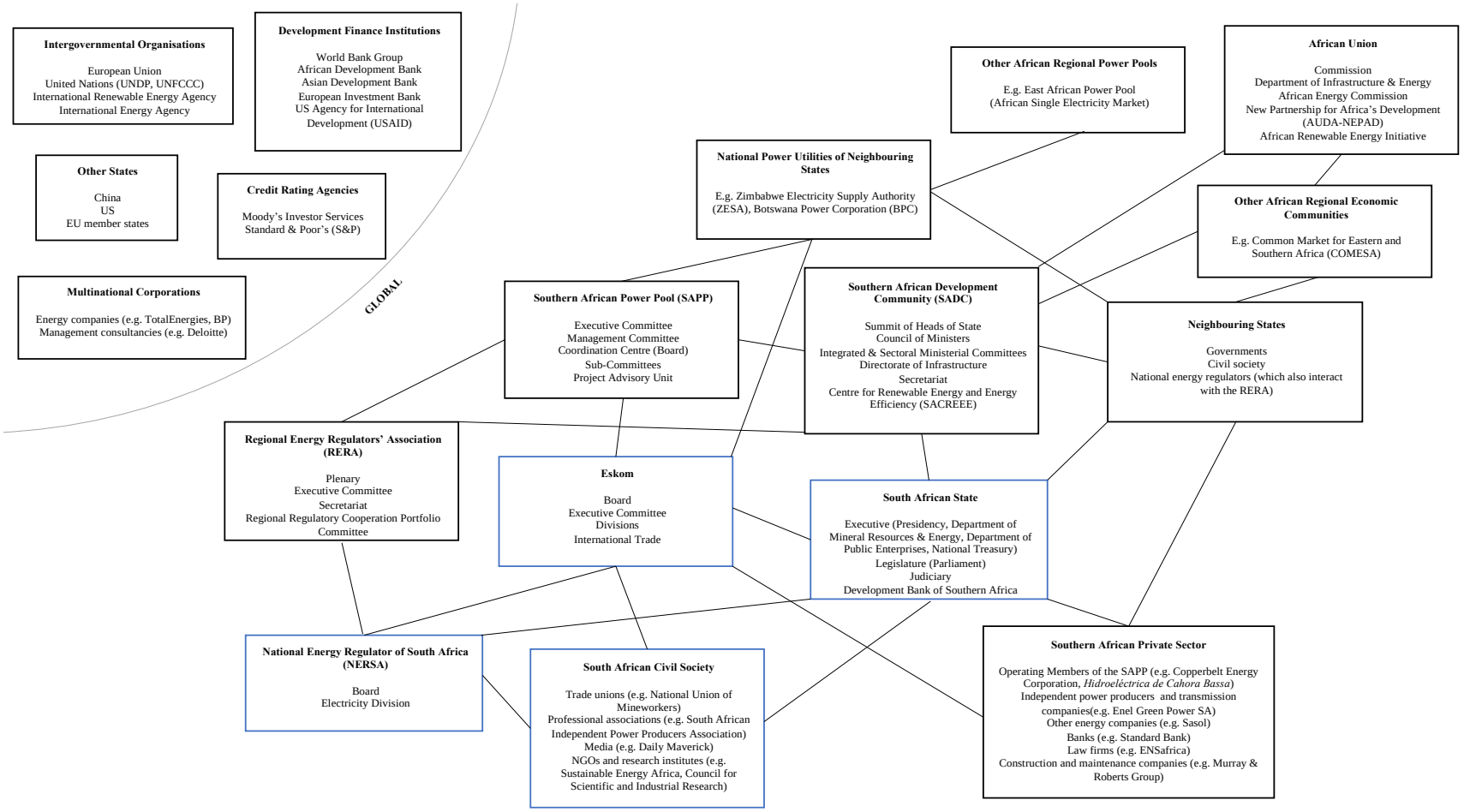
Interstate market harmonisation Regional authority Regional optimisation Regional planning Regulation Sovereignty Trade agreements	harmonisation of energy markets within the region - Regional information- and expertise-sharing - Resistance to ceding sovereignty to regional organisations	
African Single Electricity Market Interconnection Regional power pools Regional project potential	- Cross-regional power pool interconnections - Vision for the African Single Electricity Market - Ineffectiveness of other regional power pools in Africa	**Interconnection with the rest of Africa**
Alternative energy generators Copperbelt Energy Corporation Independent Power Producers Political willpower Regional market	- Political willpower for allowance for private sector participation in the SAPP - Increasing role of Independent Power Producers across Southern Africa - Need for a mixture of private sector participants - both buyers and sellers of power	**Private sector participation**
Bankability Feasibility studies Market uncertainty Power Purchase Agreements SAPP Project Advisory Unit	- Need for feasibility and impact studies of regional energy projects - Bankability and commercial viability of regional energy projects - Market demand serving as the contract 'guarantor' instead of long-term contracts with offtakers - Uncertainty around the SAPP competitive energy markets	**Project support and security**

K. Hierarchy Chart of Organising & Global Themes



Note 1: This hierarchy chart is a 'treemap' displaying the Organising and Global Themes hierarchically by the number of references in *Table 1* (see *Chapter 4*). Each rectangle has an area proportional to the number of references constituting that theme (relative to the total number of references across all themes).
Note 2: This chart was created using *NVivo 1.6.2* and overlaid with full labels for each of the Organising Themes.

L. Detailed Map of Actors' Interactions



Note 1: 'Global' actors interact with all domestic (in blue) and regional actors.

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