

EXPLORING OPERATIONAL PATHWAYS FOR ARTICLE 2.1(C) OF THE PARIS AGREEMENT IN AFRICA

A Case of High Carbon Financial Assets and Financial Sector Transformation in South Africa

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This Pathway Paper, authored by Samson Mbewe, Technical Programme Manager and Lead Researcher; Phatsimo Rahman, Researcher; Aimee Tredoux, Research Assistant; and Blaise Dobson, Researcher; and affiliated with SouthSouthNorth (SSN), serves as a dynamic working document. It signifies its provisional nature and ongoing contribution to the swiftly evolving realm of knowledge, particularly in developing the evidence base for operationalising Article 2.1(c) of the Paris Agreement in Africa. Recognising the fluidity of the subject matter, readers are encouraged to interpret its content as a proactive contribution to the rapidly expanding understanding of Article 2.1(c) in the African context. The insights contained herein are open to further investigation and refinement as the research community collectively navigates the complexities of this evolving landscape. Embracing an open and collaborative approach, this paper reflects the current state of research in the field and invites continuous dialogue and refinement, welcoming constructive engagement from policymakers, researchers, and practitioners alike.

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KEY FEATURES

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Intended Audience

This working paper is crafted to stimulate discourse and welcomes constructive engagement from policymakers, researchers, and practitioners navigating the complexities of the evolving landscape of Article 2.1(c) of the Paris Agreement in Africa.

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Contents

EXECUTIVE SUMMARY

1 INTRODUCTION	1
1.1 Purpose of this Pathway Paper	2
2 UNDERSTANDING, OPERATIONALISING AND IMPLEMENTING ARTICLE 2.1(C) IN AFRICA	3
2.1 Understanding Article 2.1 (c): Implication for Africa	3
2.2 Operationalising Article 2.1(c)	4
2.3 Distinction: Operationalising versus Implementing Article 2.1(c)	4
2.4 Importance of Operationalising Article 2.1(c)	5
2.5 South Africa's NDC Commitments and Article 2.1(c)	5
2.6 Financial Sector Implications for Guidance on Operationalising Article 2.1(c)	6
3 INTERPLAY BETWEEN FINANCIAL AND ENERGY SECTORS	8
3.1 Energy Crisis and Developmental Challenges	9
3.2 Climate-Related and Financial Sector Risks	11
4 Assessing Institutional Investments in Coal Financial Assets in South Africa	14
4.1 Quantifying the Volumes and Sources of Institutional Investments in Coal Financial Assets	15
4.2 Financial Performance and Risks Associated with Coal Investments in South Africa	19
5 Enabling Article 2.1(c): Operationalisation Market Dynamics and Policy Levers	22
5.1 Overview of Climate Change Regulations and Policies in the South African Financial Sector	22
5.2 State of Financial Sector-Related Responses to Article 2.1(c) in South Africa	23
5.3 The Role of Government and Policy Tools in Enabling Article 2.1(c) Alignment	25
6 Pathway for Operationalising Article 2.1(c)	28
6.1 Step 1: Raise Awareness and Insight into National Circumstances for Operationalising Article 2.1(c)	30
6.2 Step 2: Assess Capacities and Identify Gaps for Operationalising Article 2.1(c)	30
6.3 Step 3: Establish a Robust Policy and Regulatory Framework for Financial Flow Alignment	31
6.4 Step 4: Build Stakeholder Capabilities for Financial System and Government Engagement	31
6.5 Step 5: Develop Sustainable Financial Products and Services for Climate Investments	32
6.6 Step 6: Set Ambitious Plans and Targets for Climate Finance Commitments	33
6.7 Step 7: Enhance Climate-Related Reporting and Disclosure for Financial System Transparency	33
6.8 Step 8: Establish Robust Monitoring and Evaluation Mechanisms for Article 2.1(c) Alignment	34
6.9 Step 9: Promote Collaboration and Cross-Regional Learning for Article 2.1(c) Implementation	35
7 Recommendations	36
8 Conclusion	37

EXECUTIVE SUMMARY

This executive summary encapsulates the essence of a comprehensive pathway paper aimed at guiding African countries towards operationalising Article 2.1(c) of the Paris Agreement and aligning financial flows with low-carbon development objectives. It highlights the critical role of the financial sector in catalysing this transition. It emphasises the importance of collaborative efforts among stakeholders to navigate the challenges and seize the opportunities presented by climate-aligned finance.

Introduction and Context

The pathway paper aims to assess the role of the financial sector, particularly institutional investors, in reshaping and redirecting the flow of financial and investment flows within a country like South Africa in a way that aligns with a pathway towards low GHG emissions and climate-resilient development. Given its existing high-carbon financial assets (coal) and an advanced financial system, South Africa serves as an intriguing case study. The paper commences by acknowledging the significance of Article 2.1(c) in driving the global transition towards a low-carbon economy and its particular relevance for African countries. These nations face unique challenges, including limited financial resources, immediate development priorities, and diverse socioeconomic contexts. The pathway paper underscores the need for a nuanced approach that considers these factors while charting a course towards climate-aligned finance.

Challenges and Opportunities

Sections Three and Four delve into the specific challenges African countries encounter in aligning financial flows with climate objectives. Despite these challenges, the paper illustrates how a well-designed pathway can transform obstacles into opportunities for sustainable growth and enhanced climate resilience. It emphasises the importance of leveraging existing financial assets, enhancing policy frameworks, and fostering international collaboration to overcome these hurdles.

Policy and Financial Mechanisms

Sections Five and Six explore the policy and financial mechanisms necessary to facilitate climate-aligned finance in Africa. Strengthening policy frameworks, leveraging international climate finance mechanisms, and enhancing regional collaboration emerge as critical steps in catalysing progress. Moreover, the paper presents a detailed pathway for operationalising Article 2.1(c) and aligning financial flows with climate objectives, outlining nine key steps below to guide African countries in this endeavour:

Step 1 | Raise Awareness and Understanding of National Circumstances for Operationalising Article 2.1(c)

- ✦ Identify operational challenges and implications of Article 2.1(c).
- ✦ Government leadership in raising awareness and understanding.
- ✦ Recognise national circumstances regarding reliance on fossil fuels and high-emissions activities.

Step 2 | Assess Capacities and Identify Gaps for Operationalising Article 2.1(c)

- ✦ Conduct institutional assessment led by an institutional champion.
- ✦ Evaluate existing approaches and identify capability gaps.
- ✦ Address inadequacy of climate risk assessment and response measures.

Step 3 | Establish a Robust Policy and Regulatory Framework for Financial Flow Alignment

- ✦ Develop comprehensive policy and regulatory frameworks.
- ✦ Establish incentives and regulatory standards.
- ✦ Ensure alignment of policies with regulatory standards.

Step 4 | Build Stakeholder Capability for Financial System and Government Engagement

- ✦ Enhance stakeholder capability through partnerships.
- ✦ Strengthen knowledge and skills for different financial sub-sectors.
- ✦ Promote knowledge sharing among financial institutions.

Step 5 | Develop Sustainable Financial Products and Services for Climate Investments

- ✦ Identify and develop sustainable financial products.
- ✦ Integrate ESG factors into decision-making processes.
- ✦ Promote innovation in financial offerings aligned with climate objectives.

Step 6 | Set Ambitious Plans and Targets for Climate Finance Commitments

- ✦ Establish comprehensive plans and targets.
- ✦ Set baselines for climate-related targets.
- ✦ Foster regional collaboration for mainstreaming climate finance commitments.

Step 7 | Enhance Climate-Related Reporting and Disclosure for Financial System Transparency

- ✦ Develop robust reporting and disclosure requirements.
- ✦ Recognise challenges faced by developing countries.
- ✦ Encourage transparency in financial sector activities.

Step 8 | Establish Robust Monitoring and Evaluation Mechanisms for Article 2.1(c) Alignment

- ✦ Establish monitoring and evaluation frameworks.

- ◇ Identify areas of improvement based on evaluation results.
- ◇ Provide support for data collection and analysis capabilities.

Step 9 | Promote Collaboration and Cross-Regional Learning for Article 2.1(c) Implementation

Integrated Recommendations

A pivotal aspect of the pathway paper is Section Seven, which presents a set of integrated recommendations for policymakers, financial sector stakeholders, and African countries. These recommendations underscore the importance of multilateral cooperation, capacity building, stakeholder engagement, green financing strategies, data improvement, and innovation in financial products and services. By embracing these recommendations, African nations can navigate the complexities of climate-aligned finance and accelerate progress towards a sustainable future.

Way Forward

Moving forward, it is imperative for African countries to translate the insights and recommendations outlined in this pathway paper into concrete actions. Governments, financial institutions, civil society organisations, and international partners must work together to implement the proposed strategies and overcome barriers to climate-aligned finance. By doing so, African nations can realise their potential as leaders in sustainable development and pave the way for a brighter, more resilient future for generations to come.

- ◇ Foster collaboration among stakeholders.
- ◇ Engage with initiatives providing funding opportunities.
- ◇ Facilitate dialogue and consensus-building among stakeholders.

Conclusion

In conclusion, the pathway paper offers a comprehensive framework for advancing climate-aligned finance in Africa. It underscores the urgency of addressing climate change while recognising the potential for African countries to lead the transition to a low-carbon economy. By prioritising sustainability, fostering collaboration, and committing to long-term action, African nations can unlock new opportunities for economic growth, job creation, and resilience while contributing to global efforts to mitigate climate change.

ABBREVIATIONS AND ACRONYMS

AFOLU	Agriculture, Forestry and Other Land Use	OECD	Organisation for Economic Co-operation and Development
CBAM	Carbon Border Adjustment Mechanism	PA	Prudential Authority
CBDR-RC	Common but Differentiated Responsibility and Respective Capabilities	PACTT	Prudential Authority Climate Think Tank
CO₂	Carbon Dioxide	PIC	Public Investment Corporation
CFI	Cooperative Financial Institutions	REI4P	Renewable Energy Independent Power Producer Procurement Programme
COP	Conference of the Parties	SAAM	South African Automobile Master Plan
DBSA	Development Bank of Southern Africa	SARB	South African Reserve Bank
DFFE	Department of Environment, Forestry and Fisheries	SCF	Standing Committee on Finance
DFI	Development Finance Institute	SDG	Sustainable Development Goals
EAF	Energy Availability Factor	SIF	Principles of Sustainable Insurance
ESG	Environmental, Social and Governance	SOE	State-owned Enterprise
EU	European Union	TCFD	Task Force on Climate-related Disclosures
EU-ETS	European Union Emissions Trading System	UNFCCC	United Nations Framework Convention on Climate Change
FSA	Financial Sector Act	USD	United States Dollar
FSCA	Financial Sector Conduct Authority	ZAR	South African Rand
FSB	Financial Stability Board		
G20	Group of 20		
GCOEL	Global Coal Exit List		
GDP	Gross Domestic Product		
GEPF	Government Employees Pension Fund		
GFT	Green Finance Taxonomy		
GHG	Greenhouse gas		
IDC	Industrial Development Corporation		
IDFC	International Development Finance Club		
IFC	International Finance Corporation		
IPCC	Intergovernmental Panel on Climate Change		
IRP	Integrated Resource Plan		
JET	Just Energy Transition		
JET-IP	JET Investment Plan		
JSE	Johannesburg Stock Exchange		
MDB	Multilateral Development Bank		
MSME	Ministry of Micro, Small and Medium Enterprises		
NCCRS	National Climate Change Response Strategy		
NDC	Nationally Determined Contribution		
NGFS	Network on Greening the Financial System		
NIR	National Greenhouse Gas Inventory Report		

1 INTRODUCTION

The South African economy relies heavily on coal as its primary energy source for electricity generation, making it one of the world's most emission-intensive economies per unit of Gross Domestic Product (GDP) output.¹ Among the Group of 20 (G20) nations, the South African energy sector is the most dependent on coal, with approximately 91% of electricity being generated from this source by the state-owned enterprise (SOE) Eskom.² As a signatory of the 2015 Paris Agreement, South Africa is committed to pursuing the objectives of the accord, including limiting the rise in global temperatures to below 2°C and, if possible, below 1.5°C. The National Climate Change Response Strategy (NCCRS)³ recognises the urgent need to address climate change, and South Africa has pledged to implement measures to curb greenhouse gas (GHG) emissions

The country's first Nationally Determined Contribution (NDC) represents a significant advancement from its intended NDC submission. Specifically, South Africa has committed to achieving GHG emissions levels of 398-510 MtCO₂e by 2025 and 350-420 MtCO₂e by 2030, indicative of a substantial reduction from the initial targets of 398 and 614 MtCO₂e for the same timeframe as communicated in the first NDC.⁴ This evidences South Africa's heightened commitment to climate mitigation and carbon footprint reduction by the worldwide movement towards decarbonisation, considering its national circumstances given the Paris Agreement's recognition of common but differentiated responsibility and respective capabilities (CBDR-RC).

Fulfilling the above commitment requires a critical role from the financial sector in facilitating the transition towards a net-zero economy by 2050. This transition must adhere to Article 2.1(c) of the Paris Agreement⁵, which mandates signatories to

to climate change (Article 2.1(b)). Hence, a growing body of evidence is signalling *why* and *how* Paris-aligned financial flows are a precondition to resolving the climate crisis. Beyond the goal of mobilising finance for climate action, which still lags in both pace and scale,⁶ Article 2.1(c) places particular emphasis on the need to redirect existing financial flows from high-emitting sectors (e.g., energy, Agriculture, Forestry and Other Land Use - AFOLU, industry and waste)⁷ to low-emission pathways in a manner that equates to the overall ambitions of the Paris Agreement.

Despite the imperative nature of Article 2.1(c), divergent views and a need for a common understanding of its operationalisation persist, as highlighted by the outcomes of the Sharm El-Sheik dialogues⁸ and the 28th Conference of Parties (COP28) of the United Nations Framework Convention on Climate Change (UNFCCC)⁹. Furthermore, COP28 underscored the unique challenges faced by developing countries, citing 'challenges in attracting finance for climate action due to fiscal constraints, high debt levels, and perceptions of investment risk.' It stressed the importance of adopting a principled approach to prevent unintended consequences, conditionalities or unilateral measures that could impact cross-border investments, climate finance flows, and trade. Moreover, the outcomes of COP28 also acknowledged that realising the objectives of Article 2.1(c) holds substantial implications for financial systems, sectors and national economies.

It should be noted that shifting and aligning financial flows with the Paris Agreement is complex, necessitating comprehensive system-wide transformations. In particular, transforming and integrating climate considerations into these systems will require rationalising the stakeholders' consumption, production, financing, investment and market-oriented choices aligned with the goals of the Paris Agreement¹⁰. Many of these choices are driven by the nature of finance and investment flows, such as public versus private, domestic versus international or green versus brown, all seeking to maximise competing or differentiated objectives.

'...make their financial flows consistent with a pathway towards low GHG emissions and climate-resilient development.'

As part of the Paris Agreement's trio of long-term goals, operationalising Article 2.1(c) is critical for realising the other two long-term goals of limiting the rise in global average temperatures (Article 2.1(a)) and increasing the ability to adapt

¹ NBI. 2021. [Just Transition and Climate Pathways Study for South Africa](#).

² Climate Transparency. 2022. [Climate Transparency Report](#).

³ Government of the Republic of South Africa. 2011. [The South African National Climate Change Response White Paper](#).

⁴ Government of the Republic of South Africa. 2021. [First Nationally Determined Contribution under the Paris Agreement: September 2021](#).

⁵ UNFCCC. 2015. [Paris Agreement](#).

⁶ UNFCCC Standing Committee on [Finance on Fifth Biennial Assessment and Overview of Climate Finance Flows](#).

⁷ Ritchie, H., Roser, M. & Pablo Rosado, P. (2020). [CO₂ and Greenhouse Gas Emissions](#).

⁸ UNFCCC. 2023. [Sharm El-Sheik Dialogue Report](#).

⁹ UNFCCC. 2023. [Outcomes of the Dubai Climate Change Conference](#).

¹⁰ UNFCCC. 2022. [Report of the Standing Committee on Finance](#).

Financial systems do not operate in a vacuum; their ability to shift or mobilise finance and investment flows depends on several factors, including response actions taken by other economic role players, governments and other sectors.¹¹ The global financial system, intricately connected due to globalisation, consists of a complex network of institutions, markets, regulations, and transactions worldwide. This facilitates the flow of funds, capital, and financial services across national borders, reflecting the evolving landscape of economies, international trade and investment.

Viewed through this lens, efforts towards operationalising Article 2.1(c) must consider diverse country contexts and circumstances, especially the level of financial development. Developing countries often face challenges such as lack of depth or low access rates and efficiency relative to their developed-country counterparts. While countries with sophisticated financial systems have a wide array of alignment options, less developed countries have limited room to manoeuvre, restricting their ability to provide catalytic options and solutions necessary for financing Just Transition pathways towards net-zero economies.

In contrast to other African countries, the South African financial sector is advanced and sophisticated by international standards, with robust regulatory structures in place. It encompasses a wide range of offerings from both local and foreign establishments.¹² However, operationalising Article 2.1(c) in the broader African context will require recognising and understanding the varying degrees of financial sector development across countries, anchored in the principles of equity and CBDR-RC. Nonetheless, realising the objectives of Article 2.1(c) presents an opportunity not only for South Africa but for other African countries as well to increase their access to investment flows tied to the global low-emission shift. This is crucial for financing Just Transition pathways in key high-emitting sectors and subsectors, like energy (electricity, cooling and heating), transport and AFOLU. The realisation of just transitions for Africa presents a critical turning point in the continent's development trajectory, addressing pre-existing developmental challenges, such as energy access, food and energy insecurity, economic inequality, poverty and fiscal debt levels (further exacerbated by the impact of COVID-19).¹³

In order to transition towards a 1.5°C-consistent scenario, it is imperative to delineate how finance flows in all regions and

countries can be consistent with Paris-aligned commerce and development models. The financial systems must be calibrated to ensure that finance flows are in line with the degree, volume and extent necessary to keep global temperatures within 1.5°C if the world is to have a fair chance at mitigating the rise in average global temperature. The Intergovernmental Panel on Climate Change's (IPCC) AR6 synthesis report¹⁴ showcases the growing body of scientific evidence, emphasising the urgent action required to meet the Paris Goals. This urgency has brought the conversation regarding the reformation of economies and financial systems into focus. Since accountability under the Paris Agreement falls upon governments, by extension, this pathway paper submits that the burden of duty for the implementation of Article 2.1(c) must be embraced and actualised, in principle and deed, by all national stakeholders, including the financial sector. Embracing this responsibility becomes crucial as this pathway paper delves into its purpose, which focuses on establishing a viable option for operationalising Article 2.1(c), specifically in South Africa.

1.1 Purpose of this Pathway Paper

This pathway paper is one of four pathway papers informing the development of a report outlining an Africa-wide perspective on aligning climate-sensitive financial flows in different asset classes. It aims to assess the role of the financial sector, particularly institutional investors, in reshaping and redirecting financial and investment flows within a country like South Africa in a way that aligns with a pathway towards low GHG emissions and climate-resilient development. Given its existing high-carbon financial assets (coal) and an advanced financial system, South Africa serves as an intriguing case study. In particular, the paper narrows its focus to aligning financial flows within the South African energy sector, where a heavy reliance on coal for electricity generation poses significant challenges.

¹¹ OECD. 2021. [Financial Markets and Climate Transitions](#).

¹² Genesis Analytics & Financial Sector Conduct Authority. 2022. [Financial Sector Outlook Study 2022](#).

¹³ IEA. 2022. [Africa Energy Outlook](#).

¹⁴ IPCC. 2023. [AR6 Synthesis Report: Climate Change 2023](#).

To fulfil the main aim, this pathway paper actualises the following specific objectives:

OBJECTIVES	
1.	Building a comprehensive understanding and interpretation of operationalising and implementing Article 2.1(c) of the Paris Agreement, particularly within the African context.
2.	Quantifying and assessing the potential volumes and sources of institutional investment flows in the South African energy sector, focusing on aligning them with Article 2.1(c) of the Paris Agreement.
3.	Developing an actionable pathway for effectively operationalising and implementing Article 2.1(c) of the Paris Agreement in countries such as South Africa, considering their significant fossil financial assets (coal) and well-developed financial sector.
4.	Providing recommendations on short-to-medium-term actions by the country's decision-makers to enable the operationalisation of Article 2.1(c) of the Paris Agreement

To achieve these objectives, the paper adopts a mixed-methods research approach, conducting economic analyses to highlight market dynamics and policy levers influencing the adoption and operationalisation of frameworks supporting Article 2.1(c) of the Paris Agreement. This approach involves identifying and conceptualising potential frameworks and opportunities tailored to South Africa. The complexity of South Africa's energy transition, marked by challenges of economic inequality, a failing energy system, and over-reliance on fossil fuels, makes it a compelling case study.¹⁵

South Africa's status as the country with the most developed and liquid financial markets on the African continent adds a layer of intrigue, serving as a basis for a broader Africa-wide comparative analysis. While the pathway paper acknowledges that progress towards a sustainable transition depends on

2.1 Understanding Article 2.1 (c): Implication for Africa

The imperative operationalisation of Article 2.1(c) is a prerequisite for achieving the long-term objectives of the Paris Agreement¹⁶. Despite its urgency and importance, widespread disparity in understanding and interpretation persists, as highlighted by the launch of the Sharm El-Sheik dialogues in 2023¹⁷. The key outcomes of these dialogues were adopted at COP28, with a decision to extend and fortify the discussion from 2024 until 2025. The ongoing need for a unified understanding concerning Article

factors beyond its immediate focus, such as energy policy certainty and good governance, it aims to explore relevant lessons for operationalising and implementing Article 2.1(c). This includes addressing financial constraints, regulatory hurdles, and focused policy implementation, contributing valuable insights to the broader conversation on aligning climate-sensitive financial flows in Africa.

2 UNDERSTANDING, OPERATIONALISING AND IMPLEMENTING ARTICLE 2.1(C) IN AFRICA

This section thoroughly explores the persistent disparities in understanding and interpreting Article 2.1(c) of the Paris Agreement. By highlighting the Sharm El-Sheik dialogues as a pivotal platform, the discussion underscores the urgency and significance of operationalising Article 2.1(c) to attain the long-term goals of the Paris Agreement. Subsequently, the section systematically elaborates on the pragmatic translation of Article 2.1(c) into actionable strategies, describing the conceptual

distinctions between operationalising and implementing and underscores the importance of this operationalisation in mitigating climate risks and fostering international cooperation. The discourse then extends to illuminate the challenges and endeavours of South Africa in aligning financial flows with low-carbon alternatives. This is followed by an examination of the pressing need for specific guidance in the financial sector, accentuating the potential risks and opportunities associated with the absence of clear directives. Collectively, these components offer a comprehensive overview of the intricate dimensions surrounding the comprehension, operationalisation, and implementation of Article 2.1(c) within the African context.

2.1(c) and its complementarity with Article 9 of the Paris Agreement, coupled with the implications for developing countries with restricted options to align financial flows, underscores the critical necessity for the continuous Sharm El-Sheik dialogues. These dialogues play a pivotal role in further facilitating understanding in this complex and vital space.

Even with the continued gap in understanding, comprehensive implementation of Article 2.1(c) presents significant implications for Africa (including South Africa), owing to the considerable proportion of high-carbon financial assets held in the region. This

¹⁵ Swilling, M. 2023. [After the flip-flops and zig-zags, is a policy coherence emerging to resolve SA's energy crunch?](#)

¹⁶ WRI. 2024. [What is the Paris Agreement's Article 2.1\(c\) on Climate Finance, and why does it matter?](#)

¹⁷ UNFCCC. 2023. [Sharm El-Sheik Dialogue Report](#).

situation arises due to Africa's substantial reservoirs of various fossil fuels, encompassing oil, coal, and natural gas, and the considerable investment flows associated with these resources. About 90% of African countries depend on primary commodities for generating state revenues or earning exports, while two-thirds rely on minerals.¹⁸

In light of the escalating global drive towards decarbonising the economy, prompted by the scientific consensus on the urgent need to transition to a 1.5°C temperature threshold while concurrently achieving net-zero economies¹⁹, the viability of African economies to adopt such measures and effectively operationalise Article 2.1(c) by diverting financial flows towards low-carbon alternatives remains ambiguous. Valid concerns exist regarding the potential systemic risks associated with an abrupt devaluation of African countries' high-carbon asset classes, which could result in the creation of considerable stranded assets and impede progress towards attaining Sustainable Development Goals (SDGs)²⁰. Nevertheless, these risks can be mitigated by ensuring that Article 2.1(c) operationalisation follows a coordinated approach that considers the specific economic and market conditions prevailing in Africa.

2.2 Operationalising Article 2.1(c)

This paper introduces an innovative perspective on the operationalisation of Article 2.1(c), recognising the dynamic nature of this critical discourse. Drawing insights from the current and emerging evidence on Article 2.1(c), including the key outcomes of Sharm El-Sheikh dialogues²¹, this paper contends that operationalising Article 2.1(c) involves the practical translation of this foundational long-term goal into tangible actions. Emphasising the reshaping of financial flows to align with a pathway towards low GHG emissions and climate-resilient development, the transformative process encompasses mitigation, decarbonisation, and financial mechanisms across both the public and private sectors at domestic and international levels. Beyond achieving the overarching goal of reducing GHG emissions, the significance of this process also extends to fostering climate-resilient development, which is crucial for developing countries.

The operationalisation process is underscored by an awareness of the interdependence between climate action and sustainable development. Article 2.1(c) is positioned as integral to achieving

SDGs and poverty eradication, especially in developing nations, as enshrined in Article 2²² of the Paris Agreement. Ongoing debates surround essential systemic transformations within national economies and financial sectors, questioning whether the focus should pivot towards international financial support or span across all sectors for just transitions.

The global efforts to realise the objectives outlined in Article 2.1(c) are characterised by a diverse range of policies and measures. Adopting a principled approach is imperative to navigate this complex landscape effectively, emphasising the recognition of national circumstances. In particular, this recognition is pivotal for tailoring strategies to the unique socio-economic and environmental contexts of individual countries. Anchoring the operationalisation of Article 2.1(c) in the principles of equity and CBDR-RC is deemed essential. This principled and integrated approach ensures not only a just distribution of the burden in addressing climate change but also aligns with the overarching goal of Article 2.1(c). By acknowledging the varying capacities and historical contributions of nations, this approach fosters a balanced and fair response to climate challenges, making the operationalisation of Article 2.1(c) a comprehensive and impactful strategy for sustainable development on a global scale.

2.3 Distinction: Operationalising versus Implementing Article 2.1(c)

The discourse surrounding Article 2.1(c) of the Paris Agreement has evolved, highlighting the imperative to realise the Agreement's third long-term goal. However, the conceptual distinction between "operationalising" and "implementing" Article 2.1(c) remains ambiguous, often leading to the interchangeable use of these terms to describe the process of actualising this goal. This paper asserts that elucidating the nuances between the processes of "operationalising" and "implementing" Article 2.1(c) is crucial for fostering a shared comprehension of the intricacies involved in effectively realising the objectives of this pivotal climate accord.

In principle, "operationalising" Article 2.1(c) of the Paris Agreement refers to the practical and strategic efforts made to put the provisions of this specific article into effective action. It involves designing and implementing concrete mechanisms, policies, and measures that align financial flows with a pathway towards low GHG emissions and climate-resilient development. Operationalisation emphasises the process of translating the

¹⁸ AfDB. 2019. [Can Africa afford to Strand its Fossil Fuel?](#)

¹⁹ IPCC. 2023. [AR6 Synthesis Report: Climate Change 2023](#).

²⁰ UNU-INRA. 2019. [Africa's Development in the age of stranded assets](#).

²¹ UNFCCC. 2023. [Sharm El-Sheikh Dialogue Report](#).

²² UNFCCC. 2015. [Paris Agreement](#).

broad goals and principles of the article into tangible, on-the-ground actions, including systemic transformations in financial sectors, international collaboration, and engagement of various stakeholders.

On the other hand, "implementing" Article 2.1(c) encompasses a broader concept that goes beyond the specific actions taken to operationalise the article. Implementation involves executing the entirety of Article 2.1(c), including both the strategic planning (operationalisation) and the actual carrying out of those plans. It involves the comprehensive application of the article's provisions, not only in terms of financial flows but also in achieving the broader objectives related to low greenhouse gas emissions, climate-resilient development, sustainable development goals, and poverty eradication.

Given the above distinction, this paper asserts within this context that operationalising is a subset of implementing, focusing specifically on the actionable steps and strategies to make Article 2.1(c) effective. At the same time, implementation encompasses the entire process of executing, monitoring, and achieving the goals outlined in the article, providing a comprehensive framework for realising the long-term objectives of the Paris Agreement.

2.4 Importance of Operationalising Article 2.1(c)

Although there are challenges regarding the practical application of Article 2.1(c), its significance stems from the need to shift financial resources from high-carbon assets to low-carbon alternatives, thereby achieving the primary goal of the Paris Agreement to mitigate global warming. By effectively implementing this provision, nations can ensure that public and private financial investments support sustainable, low-carbon initiatives. This contribution aligns with the broader climate mitigation endeavours within the principles of CBDR-RC.

Furthermore, the full implementation of Article 2.1(c) will serve as a catalyst for encouraging investment in low-carbon solutions. This action sends a robust signal to the financial sector, businesses and investors, emphasising that transitioning to low-carbon pathways is not only environmentally responsible but also economically viable. Consequently, it fosters a supportive environment for increased investment in renewable energy, energy efficiency, sustainable infrastructure, and other climate-friendly sectors. This, in turn, would stimulate innovation, job

creation, and economic growth within industries that actively contribute to a low-carbon future.

Moreover, operationalising Article 2.1(c) would aid in mitigating the financial risks associated with climate change. The transition from high-carbon to low-carbon assets can significantly reduce the vulnerability of financial investments to potential devaluation. High carbon assets, such as fossil fuel reserves or infrastructure, face increasing risks as the world decarbonises at pace and scale. By operationalising this provision, countries can proactively manage these risks by promoting divestment from high-carbon assets and redirecting investments towards resilient, sustainable, and climate-friendly alternatives. The diminishing timeframes to have a meaningful impact on climate change imply that divestment and investment redirection must happen simultaneously.

Finally, the operationalisation of Article 2.1(c) would promote international cooperation by urging developed countries to support developing nations in their endeavours to transition to low-carbon pathways, emphasising Article 2.1(c) and its complementarity with Article 9 of the Paris Agreement. As noted in the outcomes of the Sharm El-Sheikh dialogues, Article 9 can be considered either a means to operationalise and support Article 2.1(c) or complementary²³. Either way, this highlights the importance of channelling financial flows towards supporting adaptation and mitigation measures in developing countries to enhance their adaptive capacity and resilience effectively and equitably.

2.5 South Africa's NDC Commitments and Article 2.1(c)

How to effectively operationalise Article 2.1(c) is an emerging area with limited best and standard practices. For example, the NDC²⁴ submission of South Africa does not explicitly mention Article 2.1(c). Like many developed and developing countries, South Africa is grappling with *effectively implementing this provision*. Among African nations, only Nigeria explicitly references Article 2.1(c) in its NDC, highlighting governmental tools related to finance, such as fiscal policy levers, public finance, and information instruments, but excluding financial policies and regulations²⁵.

However, related points demonstrate South Africa's efforts to facilitate and encourage the redirection of financial flows to

²³ UNFCCC. 2023. [Sharm El-Sheikh Dialogue Report](#).

²⁴ Government of the Republic of South Africa. 2021. [First Nationally Determined Contribution under the Paris Agreement: September 2021](#).

²⁵ The Federal Government of Nigeria. 2021. [First Nationally Determined Contribution \(Updated\)](#).

achieve reductions in GHG emissions. The NDC highlights government-led financial instruments, such as the 2019 Carbon Tax Act²⁶ and the Draft Integrated Resource Plan (IRP) of 2023²⁷, which aims to shift investments in the energy mix toward renewable energy sources. It also emphasises the role of the domestic financial sector in supporting adaptation funding for investors to meet NDC goals. It also underscores the role of the domestic financial sector in supporting adaptation funding for investors to meet NDC goals. However, challenges persist regarding private sector access to advanced adaptation finance. Collaborative efforts involving the National Treasury, the South African Reserve Bank (SARB), financial sector regulators, and the Department of Environment, Forestry and Fisheries (DFFE) focus on sustainable finance initiatives, encompassing climate and green finance, social considerations, governance, and financial stability.

The NDC emphasises the significance of establishing consistent investment requirements to reduce transaction costs and enable financial market participants to identify and respond to green investment opportunities. Concrete examples of financial flows consistent with pathways to low GHG emissions and climate-resilient development mentioned in the NDC include South Africa's expenditure of 6 billion USD on adaptation efforts in the past five years, investments in renewable energy facilitated through initiatives like the Renewable Energy Independent Power Producer Procurement Programme (REI4P), resulting in declining prices for wind and solar energy, and substantial domestic and foreign investments totalling ZAR 209.7 billion (~USD 10.3 billion) in renewable energy developments.

2.6 Financial Sector Implications for Guidance on Operationalising Article 2.1(c)

To date, specific guidance on *how* to operationalise Article 2.1(c) still needs to be provided. Party and non-party stakeholders to the Paris Agreement have cited this as an impediment to presenting ambitious NDCs and progressive mitigation and adaptation actions related to this goal. Although some countries may see the absence of guidance as an opportunity for innovation and flexibility, others may view it as a risk to global coordination and equity in climate action, which has serious implications for keeping the 1.5°C temperature limit alive and achieving net-zero emissions.

Within the financial sector, the lack of guidance has equally resulted in opportunities and challenges (as presented in Table 1), impacting its role in contributing to the transformation of financial flows. Notably, the impact and significance of this absence in guidance varies depending on the specific context and dynamics of the financial sector in each country. This paper argues that the lack of guidance poses greater challenges than opportunities to maintain the 1.5°C target by 2030 and achieve net-zero emissions by 2050. Failing to achieve these targets would result in substantial and potentially irreversible consequences for the planet and its inhabitants. Although the precise influence on financial markets would vary based on specific circumstances, regional disparities, and the effectiveness of climate change mitigation efforts, it is anticipated that the failure to reach these targets would lead to heightened risks to financial stability, manifesting through physical, transition, liability, and asset stranding risks, among others.

²⁶ Government of the Republic of South Africa. 2019. [Carbon Tax Act 15 of 2019](#).

²⁷ Department of Mineral Resources and Energy. 2023. [Draft Integrated Resource Plan](#).

Table 1: Opportunities and Challenges Confronting the Financial Sector in the Absence of Guidance for Implementing Article 2.1(c)

Opportunities	Challenges
Innovation in financial instruments and mechanisms that support climate action leads to the creation of innovative financing models or impact investment strategies to mobilise or leverage private capital towards low-carbon and climate-resilient projects.	Lack of harmonisation and transparency in climate-related financial reporting and practices can make it challenging to compare and assess financial institutions' sustainability and climate performance of financial institutions. Inconsistent approaches may also confuse investors and hinder the development of a coherent global framework for climate-related financial disclosure.
Tailored approaches to financial sector capabilities enable countries to leverage their financial institutions' strengths and develop strategies best suited to their domestic financial markets, facilitating more effective mobilisation and allocation of climate finance.	Risk of inadequate climate risk assessment: Financial institutions could underestimate the financial risks associated with climate change, leading to misallocation of capital and potential exposure to stranded assets. <i>Clear guidance can help ensure that financial institutions have robust climate risk assessments in their decision-making processes.</i>
Adaptability to evolving market dynamics, technological advancements, and changing investor preferences is necessitated without rigid guidance, allowing the financial sector to respond quickly to new opportunities and support innovative financing solutions aligned with Article 2.1(c).	Inconsistent integration of climate considerations into financial institutions' operations and investment decisions, resulting in some institutions prioritising short-term financial returns over long-term climate impacts, could potentially perpetuate unsustainable practices. <i>Clear guidance can promote consistent integration of climate considerations and align financial sector actions with Article 2.1(c) objectives.</i>
Flexibility to adapt to diverse financial systems, acknowledging that different countries have varied financial systems, ranging from mature and developed markets to emerging and evolving markets, can enable each financial sector to adapt and align climate-related practices with its unique financial system and regulatory framework. This flexibility can help to facilitate the integration of climate considerations into diverse financial systems.	Limited support for developing countries in building their financial capabilities and accessing affordable financing for climate projects. Clear guidance can help ensure that financial institutions prioritise and facilitate climate finance flows to developing countries, thus supporting their efforts to implement Article 2.1(c).
	Risk of market fragmentation when different financial institutions adopt divergent approaches to climate-related practices could result in inefficiencies, increased transaction costs and setbacks in developing a unified and coordinated global financial system that effectively supports climate objectives. <i>Clear guidance can help promote harmonisation and coordination across the financial sector's actors.</i>
	Limited access to climate finance for underserved sectors, such as small and medium-sized enterprises (SMEs) or projects in developing countries, can result in a lack of standardised criteria for evaluating and financing such projects, making it challenging for them to access the necessary funds to implement climate actions. <i>Clear guidance can help address these barriers and promote inclusivity in climate finance use.</i>
	Source: Author's own conceptualisation

3 INTERPLAY BETWEEN FINANCIAL AND ENERGY SECTORS

The interplay between the financial and energy sectors in South Africa, particularly within the context of operationalising and implementing Article 2.1(c) of the Paris Agreement, presents unique challenges and opportunities. South Africa ranks as the second most carbon-intensive economy, compared to other economies, with more than 500 billion USD in GDP globally, more than twice the G20 average (per USD of GDP)²⁸. As of 2020, South Africa's coal production and consumption ranked it seventh among global producers and within the top five consumer nations, respectively, paradoxically underscoring its status as one of the most coal-intensive energy sectors in the world²⁹. Coal constitutes the country's primary energy source for power generation. At the same time, the liquid fuels sector employs coal-to-liquid processing, and the industrial sector heavily relies on coal.³⁰

Over the past decades, heavy reliance on coal has attracted substantial institutional investments in coal-related financial assets. Pension funds, insurance companies, asset management firms, and other domestic and international financial institutions have invested in stocks, bonds, and derivatives associated with coal mining operations, coal-fired power plants, and coal-related infrastructure.³¹

The advanced South African financial system, which comprises a complex banking sector, a well-established bond market, and dynamic stock exchanges, enables these investments³². It boasts an exceptional asset-to-GDP ratio (as indicated by Figure 2), surpassing that of most emerging market economies, which was recognised as Africa's most developed financial market in 2022.³³ Figure 1 illustrates South Africa's primary energy consumption and its pronounced reliance on coal, which makes up nearly 71%.

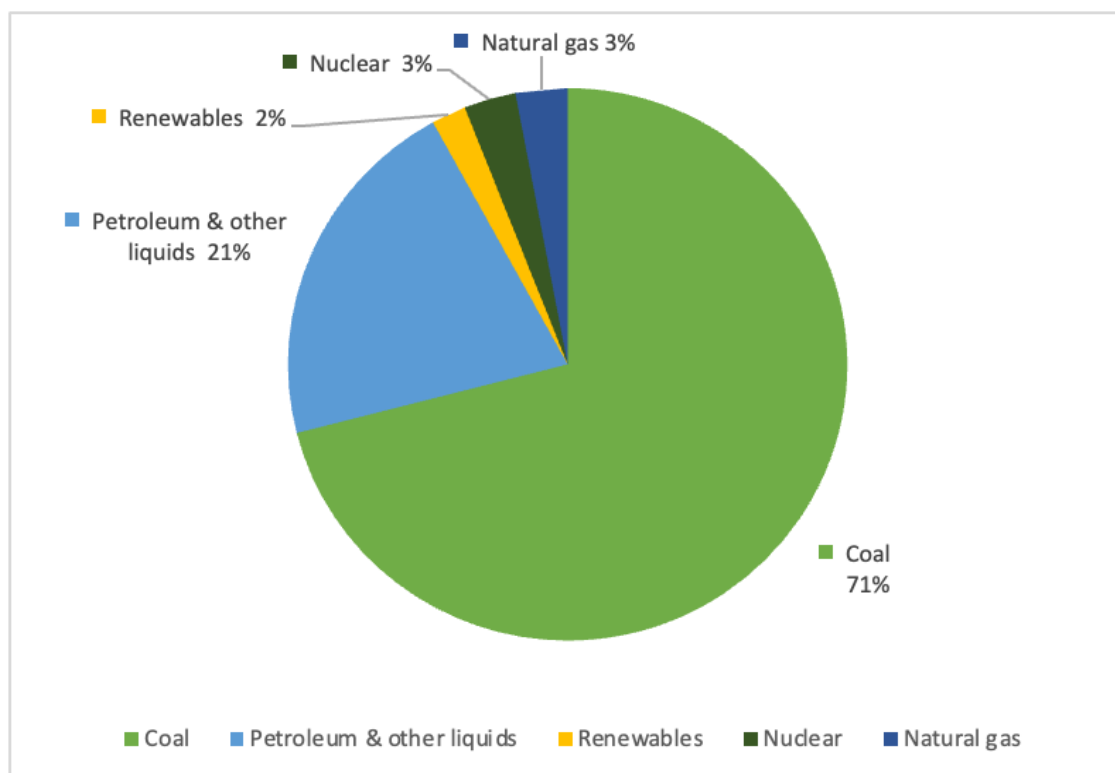


Figure 1: Primary Energy Consumption in South Africa

Source: BP Statistical Review of World Energy (2023)

²⁸ NBI. 2022. [It all hinges on Renewables.](#)

²⁹ EIA. 2022. [Country Analysis Executive Summary: South Africa.](#)

³⁰ According to Tyler and Mgoduso (2022), the electricity sector contributes approximately 42% to the country's emissions. This suggests a mitigation pathway needing to decarbonise the energy sector by mid-century to reverse its historical reliance on abundant coal reserves to generate relatively inexpensive power.

³¹ Urgewald. 2023. [Investing in Climate Chaos.](#)

³² IMF. 2022. [South Africa: Financial Sector Assessment Programme – Financial System Stability Assessment.](#)

³³ Statista. 2023. ABSA Africa Financial Markets Index 2022.

Recognising the pressing need to decarbonise and transition the South African energy sector, there is an increasing acknowledgement of the significance of redirecting financial and investment resources away from coal. This highlights the crucial role of the financial sector in supporting a pathway towards low GHG emissions and climate-resilient development. According to the IPCC, to limit global warming to 1.5°C, the global financial sector needs to amplify its investments in climate action to three to six times the current level by 2030³⁴. However, emerging

evidence contradicts any progress towards this goal, as it reveals that global banks have provided fossil fuel financing amounting to 5.5 trillion USD since adopting the Paris Agreement³⁵. Similar patterns have been observed in South Africa, where estimates indicate that between 2016 and July 2021, local financial institutions provided at least 8.4 billion USD³⁶ in finance to fossil fuel projects and companies Energy Crisis and Developmental Challenges.

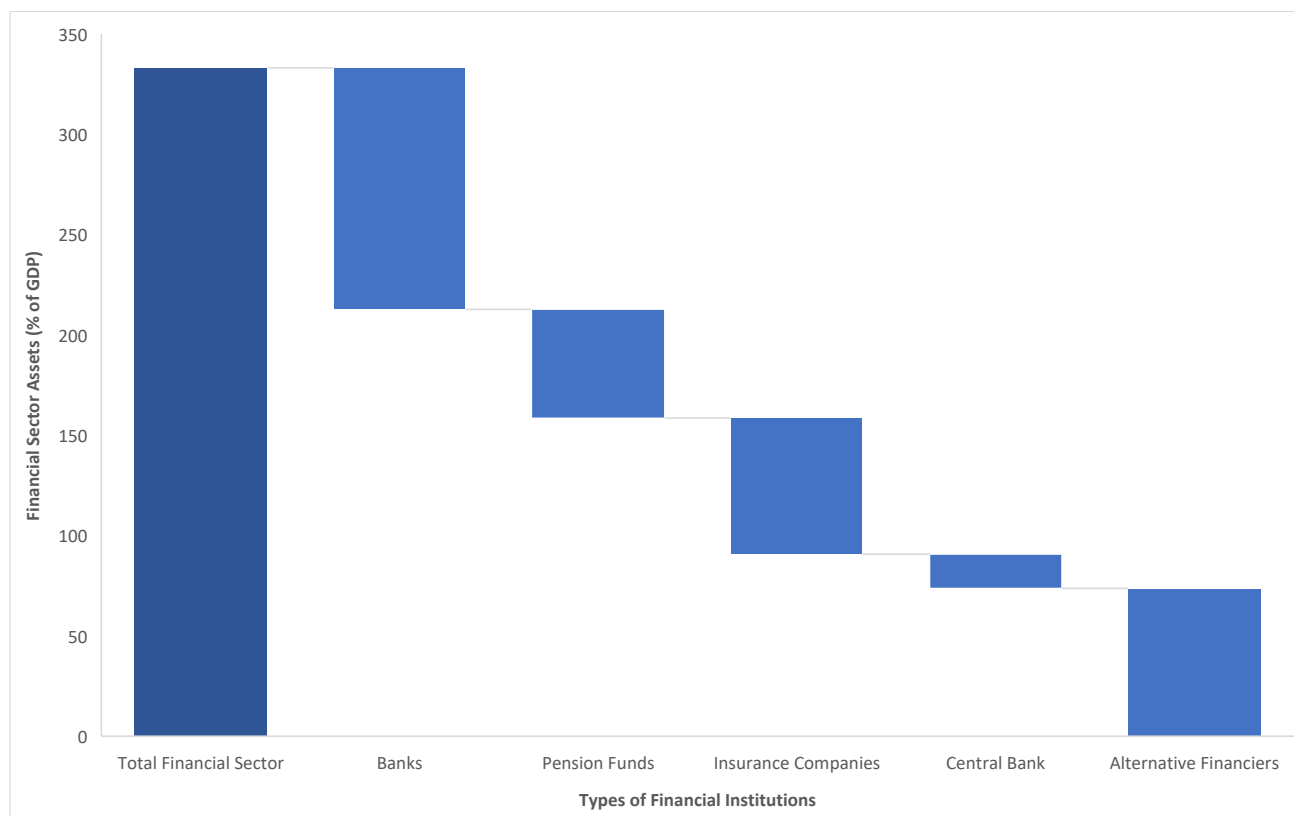


Figure 2: The South African Financial Sector Total Assets (% of GDP).

Source: FCSA Financial Sector Outlook Study (2022)

3.1 Energy Crisis and Developmental Challenges

Despite being classified as an emerging market economy, South Africa faces numerous challenges, such as a constrained budget, stunted economic growth, and inflationary pressure, coupled with significant levels of poverty and high unemployment rates (especially among the youth), all exacerbated by the post-COVID-19 pandemic recovery³⁷. Moreover, it ranks among the most economically unequal countries globally in terms of income and wealth, with Gini coefficients exceeding 0.7 and 0.9, respectively.³⁸ These

challenges have implications for socio-economic development and sustained economic growth in the country, which is crucial for lifting a significant proportion of the country out of poverty.

In addition to these developmental challenges, South Africa is currently experiencing an energy crisis due to inadequate generation from the national power utility, Eskom. The worsening energy crisis has persisted since 2007 with intermittent load-shedding periods due to ageing power plants that frequently break down and an unreliable coal supply, resulting in inadequate power generation.³⁹ In 2022, Eskom's installed

³⁴ IPCC. 2018. Report for Policy Makers.

³⁵ Rainforest Action Network. 2023. [Banking on Climate Chaos](#).

³⁶ Geuskens, I. & Butjin, H. 2022. [Locked out of a Just Transition: Fossil Fuel Financing in Africa](#).

³⁷ SARB. 2021. [Unlocking Growth Prospects in Post-Pandemic South Africa](#).

³⁸ Mbewe, S. & Woolard, I. 2016. [Cross-sectional features of wealth inequality: Evidence from the National Dynamic Income Study Working Paper](#).

³⁹ The Global Warming Policy Foundation. 2020. [The Decline and Fall of Eskom](#).

capacity was 47 GW, while its production was only around 29 GW, 61% of the available capacity.⁴⁰ This is in contrast to 2008, when the energy crisis had already started. Still, it was less severe, where Eskom had an installed capacity of 43 GW and produced 38.7 GW, which accounted for 89.99% of the total available capacity⁴¹. Despite a decline in electricity generation, the energy demand has continued to rise steadily in the face of a growing population. Between 2008 and 2022, the population increased from 50.5 million to 60.6 million people, representing a growth of 20%⁴².

This increase in population has put additional pressure on the struggling energy sector to meet the increasing power demand. Although there was a respite from load-shedding in 2016 and 2017, as shown in Figure 3, due to improved management and maintenance of power plants, load-shedding hours have increased exponentially since 2018 due to the energy crisis.

By the end of 2022, over 200 days of load-shedding (~1949) hours had been recorded for the year, the highest number to date. In 2023, the situation worsened, resulting in inadequate ongoing supply-side management and causing up to six hours of power outages daily. The context of energy policy, parastatal governance and service delivery has been subject to much analysis.⁴³

Eskom's Energy Availability Factor (EAF) measures the actual energy produced by the utility, represented as a percentage of its total capacity, which has been steadily declining. In 2022, Eskom produced only 53.16% of its total capacity, and by the first quarter of 2023, this availability factor dropped to 52.56%. This situation severely affects the country's finances over and above other market-related challenges, such as limiting economic growth, loss of foreign investment, and compromised business profits. Loadshedding alone costs the economy approximately R150–R250 million (8.4 million – 14.1 million USD) daily⁴⁴. To compensate for the insufficient power, Eskom has resorted to using diesel-fuelled open-cycle gas turbines for emergency electricity generation. The continuous load-shedding further exacerbates the financial strain on the power utility, with expenditures on diesel reaching approximately ZAR 7.3 billion (416 million USD) over two months⁴⁵.

Given these challenges, achieving an energy transition will necessitate substantial financial investment by the public sector,

specifically focusing on electricity generation by Eskom. State-owned enterprises will be crucial in the energy transition, and targeted funding, financial flows and support will be required to address the energy crisis.

3.2 Climate-Related and Financial Sector Risks

The financial system is pivotal in shaping the climate through investment and lending activities. By funding projects contributing to GHG emissions and environmental degradation, the financial sector perpetuates the climate crisis and exposes the climate system to substantial risks. To effectively manage systemic risk, financial institutions must move beyond merely protecting individual portfolios from discrete climate risks and, instead, prioritise efforts to mitigate the impact of their lending, underwriting, and investments on the climate.⁴⁶ Moreover, the government plays a crucial role in managing the systemic risks associated with climate change to prevent the potential collapse of the entire financial system. Recognising that climate change's impact extends beyond its components' cumulative effect, the government must proactively address climate-related risks.

The increasing impacts of climate change give rise to climate-related risks that affect all financial institutions' business strategies and financial positions. As extreme weather events become more frequent and severe, businesses and industries face heightened exposure to physical risks, such as property damage, supply chain disruptions, and increased insurance costs⁴⁷. These climate-related events can have cascading effects on the financial sector, potentially impacting banks, insurance companies, and other financial institutions. Table 2 presents the climate-related risks faced by the financial sector in South Africa. Additionally, the transition to a low-carbon economy presents transition risks, as companies that fail to adapt may experience asset devaluation and the risk of stranded assets. When aggregated, these risks can influence a country's national financial resilience and stability.

It is worth noting that the impacts of climate change are increasingly leading to the emergence of new or inadequately understood risks. Without a comprehensive implementation of Article 2.1(c), as seen in countries like South Africa that rely heavily on high-carbon assets, transition risks will likely arise. For instance, the proposed Carbon Border Adjustment Mechanism (CBAM) by the European Union (EU) intends to address carbon leakage and

⁴⁰ CSIR. 2022. [Statistics of Utility-Scale Power Generation in Africa](#).

⁴¹ Eskom. 2008. [Annual Report](#).

⁴² United Nations. 2022. [Revision of World Population Prospects](#).

⁴³ Swilling, M. 2023. The game-changer for SA energy in the Budget Speech – and the fight we have on our hands.

⁴⁴ BusinessTech. 2022. [Eskom's Horror Year of Loadshedding](#).

⁴⁵ Bloomberg, 2023. [Eskom Latest: Loadshedding Paused as Generation Capacity Improves](#).

⁴⁶ Morningstar. 2023. [Capturing the Direct and Indirect Risks of Physical Climate Change in Investment Portfolios](#).

⁴⁷ Environmental Defence. 2022. [Roadmap to a Sustainable Financial System in Canada](#).

safeguard the EU industrial producers by imposing a carbon price on imported goods from outside the EU. Implementing CBAM will have implications for developing countries like South Africa, which rely heavily on coal exports but face challenges in rapidly transitioning to greener production methods.⁴⁸ Due to the country's significant investment in coal infrastructure and reliance on coal, South Africa is particularly vulnerable to the risk of stranded assets⁴⁹ in the face of changing global regulations, such as carbon pricing in critical export markets.

Financial institutions have a crucial role to play in financing the transition to a more sustainable economy by investing in renewable energy and clean technologies, including supporting green initiatives⁵⁰. This entails catalysing effective capital reallocation, developing innovative financing structures, and expanding the range of climate finance products and services that facilitate the reduction of harmful emissions. Financial institutions can contribute to a more sustainable and resilient economy by actively participating in these efforts.

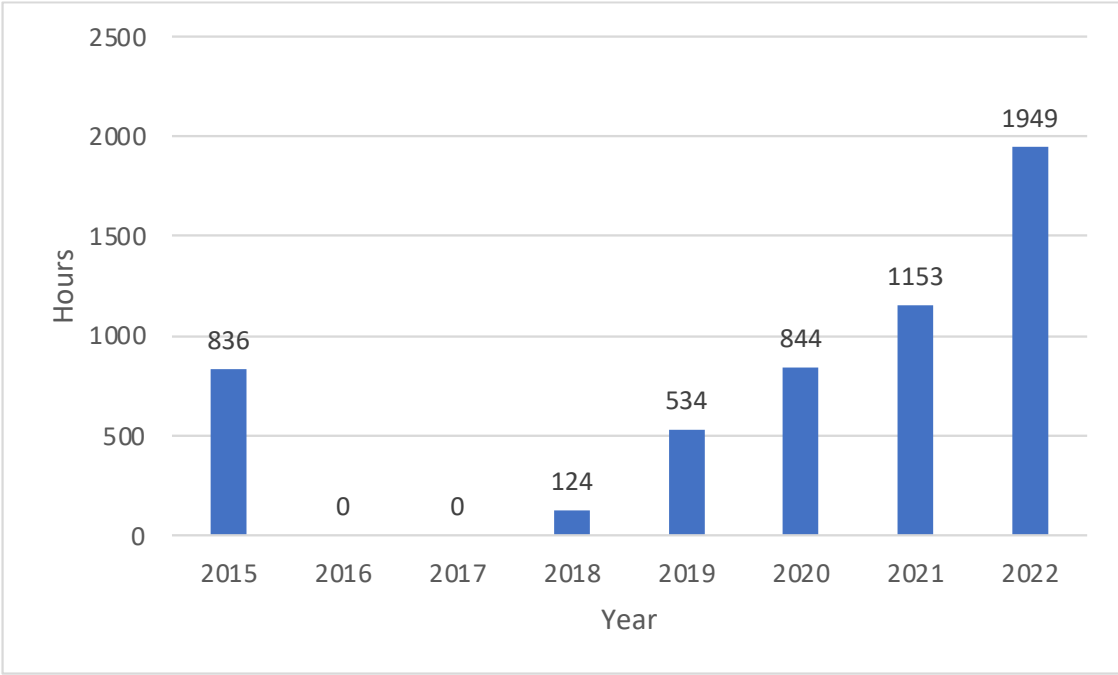


Figure 3. Hours of National Power Outages from 2015 – 2022.

Source: Authors own tabulation using data from Business Tech (2022).

3.2.1 Financial Sector Development and Implementing Article 2.1(c)

A well-developed financial sector becomes crucial in implementing Article 2.1(c), particularly in a country heavily reliant on fossil fuel financial assets. The financial sector is pivotal in mobilising and directing funds towards climate-friendly investments, such as renewable energy projects and sustainable infrastructure development. It facilitates efficient capital flow, encourages the adoption of innovative financial instruments, and promotes responsible investment practices that align with the Paris Agreement goals⁵¹. Moreover, a well-functioning financial sector enables measuring, reporting, and verifying climate-related financial activities, thus fostering transparency and accountability. By providing sufficient financial resources, risk

management tools, and expertise, a well-developed financial sector accelerates the adoption of clean technologies, supports the growth of environmentally conscious entrepreneurship, and drives the implementation of mitigation and adaptation measures outlined in Article 2.1(c). Consequently, it enhances the prospects of achieving the ambitious climate goals outlined in the agreement.

⁴⁸ The Africa Climate Foundation and the London School of Economics and Political Science. 2023. [Implication for African Countries of Carbon Border Adjustment Mechanism in the EU](#).
⁴⁹ UNU-INRA. 2019. [Africa's Development in the Age of Stranded Assets](#).

⁵⁰ UNCTAD. 2023. [World Investment Report: Chapter IV Investing in Sustainable Energy for all](#).
⁵¹ UNCTAD. 2023. [World Investment Report: Chapter IV Investing in Sustainable Energy for all](#).

3.2.2 Effects of Differences in Financial Development on the Operationalisation of Article 2.1(c) of the Paris Agreement

The effective operationalisation of Article 2.1(c) is shaped by distinct characteristics in the financial sectors of developed and developing countries. Due to their greater financial resources and capacity, developed countries are generally better positioned to support climate change mitigation and adaptation efforts adequately

Their more extensive and diverse financial sectors provide a platform for a broader range of investment opportunities, thus enabling them to mobilise funds specifically for investments in low-carbon projects, renewable energy initiatives, and climate-resilient infrastructure. For example, their financial sectors offer a more developed market for green bonds, renewable energy funds, and other climate-related investment vehicles. On the other hand, developing countries may face challenges in accessing sufficient financial resources to transition to a low-carbon economy and build resilience to climate impacts. They tend to have fewer such investment opportunities available in their financial sectors, which limits their ability to attract climate finance and engage in low-carbon development⁵².

Regulatory frameworks and governance differences can also impact not only Article 2.1(c) operationalisation but also implementation. Developed countries with more robust financial regulations can enforce climate-related requirements on financial institutions, such as disclosure of climate risks, integration of sustainability criteria, and alignment of investments with low-carbon goals. Conversely, developing countries may face challenges implementing and enforcing similar regulations due to limited institutional capacity and resources.

Developed countries often possess greater technical capacity and expertise in evaluating and financing climate projects⁵³. Their financial sectors may have specialised climate finance teams, risk assessment capabilities, and knowledge of sustainable investment practices. Developing countries may need to strengthen their technical capacity to assess and finance climate projects and attract investment effectively. Financial inclusion is crucial in operationalising Article 2.1(c) for developed and developing countries. Expanding access to financial services and promoting financial inclusion in developing countries can help individuals and businesses participate in low-carbon and climate-resilient activities, thus

contributing to the overall alignment of financial flows with Article 2.1(c). Developed countries can also focus on inclusive financial solutions to ensure that vulnerable communities can access climate finance and contribute to emission reduction and resilience-building efforts.

Developed countries generally have more stable and resilient financial systems due to more robust regulatory frameworks, risk management practices, and institutional capacity. Financial crises are relatively less frequent in developed countries than in developing countries, which may experience higher volatility and vulnerability to economic shocks. This stability and resilience can play a significant role in supporting the operationalisation of Article 2.1(c) by ensuring a more predictable and sustainable flow of climate finance. Developed countries often have more extensive international financial integration, including cross-border investments, multinational financial institutions, and participation in global financial markets. Developing countries may have more limited integration due to various factors such as capital controls, less mature financial markets, and lower levels of foreign investment. International financial integration can facilitate the flow of climate finance and support the operationalisation of Article 2.1(c) by providing access to a broader range of financing options and opportunities for collaboration.

⁵² International Monetary Fund. 2023. [Global Financial Stability Report](#).

⁵³ Climate Policy Initiative. 2022. [Landscape of Climate Finance in Africa](#).

Table 2: Climate-Related Risks Faced by the Financial Sector in South Africa

Risks	Banking Direct	Banking Indirect	Investment	Retirement Funds	Insurance
Physical	Impact is common to all financial sectors: Dependence on local government emergency response teams; business interruption – impacts on value market positions; supply chain interruptions – e.g., parts from international suppliers; Disasters create increased social vulnerabilities; Links between climate issues and security risks; Migration (inward and outward)				
Increased likelihood of extreme weather events, fire, flood, storm damage, sea level rise, water availability	Risk to own facilities Data centres – business continuity New investments in water security and water quality are required for facilities	Land/buildings held as security for loans (e.g., mortgages, commercial) Default risk: Impacts on agricultural outputs	Investments in land or buildings impacted Disaster impact on the viability of underlying investments	Retirement funds are significant investors in the urban infrastructure – increasing vulnerability in some locations to extreme weather, ecosystem and biodiversity degradation	Increasing frequency, quantum of claims Declining insurability Potential for convergence – creating black swan events
Transition	Impacts on creditworthiness, ability to attract investment and secure long-term returns, insurability				
Regulatory change – impacts on business viability	Carbon tax Adequacy of portfolio risk evaluation, management and disclosure	Carbon tax impacts on fuel and costs Regulatory changes Border-tax adjustments Trade sanctions or restrictions – e.g., reduced coal exports	Diminishing long-term investment viability for some sectors until the opportunities focus is taken	Challenges of holding investments to deliver optimum results in an uncertain future	Changing flood lines or high-water levels may significantly impact the cost of insuring some properties An increase in solvency requirements may reduce the viability of segments
Consumer/market change	Consumers pushing for change (e.g., anti-fossil fuels) Civil society or global pressure Reputation management	Changing consumer pressures Reputation management	Short versus long-term returns Reputation management Investment losses	Delivering optimum long-term returns Members push for climate-friendly investments	Likelihood of decreasing affordability due to risks of increasing Pressure groups pushing for the withdrawal of underwriting for some businesses (e.g., coal)
Stranded assets	Assets retired before the end of economic life, creating stranded investments	Assets retired before the end of economic life, creating stranded investments	Investments in assets that become unviable before loan or investment periods end	Investments in assets that become unviable before the loan or investment periods end	Increasing cost of claims for high-risk infrastructure leads to assets being abandoned – creating social issues
Liability					
Director's and officers' liability insurance and disclosure risk	Cost/pricing and attribution of climate-related risks Questions re: directors' role and adequacy of disclosure Attribution to climate risk challenging Potential of increased litigation regarding negligence or lawlessness				

Source: Authors own tabulation using data from the Government of the Republic of South Africa. (2021).

3.2.3 Role of Article 9 in Complementing and Enabling Article 2.1(c) Operationalisation

The differences in financial sector maturity between developed and developing countries further exemplify the importance of supporting developing countries in operationalising Article 2.1(c). Article 2.1(c) of the Paris Agreement emphasises the need to enhance the implementation of the Convention, particularly its objective under Article 2, while also considering the provisions of Article 9, which underline the support for developing countries. Article 9 emphasises the provision of financial resources, technology transfer, and capacity-building to enable developing countries to undertake effective climate action and adapt to the impacts of climate change⁵⁴.

The complementarity between Article 2.1(c) and Article 9 lies in the recognition that the successful implementation of the Paris Agreement's goals requires enhanced support and cooperation, especially for developing countries, to overcome some of the technical and capacity constraints that these countries face⁵⁵. Practical measures could take the form of:

Developed countries can offer technical assistance and capacity-building support to enhance developing countries' regulatory and institutional frameworks. This includes sharing expertise in climate-related financial regulations, risk assessment methodologies, and sustainable investment practices. Furthermore, capacity-building programmes can focus on improving financial literacy and knowledge regarding climate finance instruments. Developed countries can provide technical support in developing green bond guidelines, promoting market standards, and encouraging collaboration between local and international investors. They can also act as anchor investors, encouraging private sector participation in green bond issuances in developing countries.

Developed countries can foster knowledge-sharing platforms and facilitate collaboration between financial institutions in developed and developing countries. This can be accomplished through workshops, conferences, and peer-learning opportunities to share good practices, successful case studies, and innovative financial instruments related to climate finance. Another support channel is sponsoring South-South cooperation between key government stakeholders, regulatory bodies, and oversight authorities. Developing long-term partnerships between financial institutions in developed and developing countries can support the transfer of expertise, foster joint investments in climate projects, and encourage sustainable

finance practices. These partnerships can be facilitated through international initiatives, networks, and agreements.

Technology transfer is another crucial area where developed countries can contribute. They can support the transfer of clean technologies to developing nations through partnerships, joint ventures, and collaborations between financial institutions, technology providers, and project developers. Access to advanced technologies enables developing countries to implement climate-friendly projects more effectively and attract investment.

Developed countries can assist in the development of inclusive financial services in developing countries, such as microfinance and innovative insurance products for climate risks. Tailored financial services for vulnerable communities can ensure their inclusion in low-carbon and climate-resilient activities. Building financial literacy and capacity among underserved populations is crucial in this regard.

Putting these measures into action would enable developed nations to actively assist developing countries in cultivating their financial markets and operationalising Article 2.1(c) of the Paris Agreement. These supportive actions extend beyond merely providing financial resources to developing nations. Collaboration and cooperation play pivotal roles in fostering climate finance flows, contributing significantly to worldwide endeavours for low-carbon and climate-resilient development.

4 ASSESSING INSTITUTIONAL INVESTMENTS IN COAL FINANCIAL ASSETS IN SOUTH AFRICA

This section initiates a comprehensive exploration of institutional investments in South Africa's coal financial assets, crucial for informing practical steps towards Article 2.1(c). It aims to enhance transparency and stakeholder awareness by focusing on quantifying investment volumes and sources. Subsequently, detailed findings emerge on investments in South African coal companies, shedding light on key players such as Sasol and Eskom and prompting considerations for diversification. The narrative then delves into the financial landscape and associated risks within the coal sector, encompassing environmental, regulatory, financial, market, and social dimensions. Collectively, these analyses provide a nuanced understanding of the intricacies surrounding institutional investments in South Africa's coal sector, emphasising the need

⁵⁴ UNFCCC. 2015. [Paris Agreement](#).

⁵⁵ UNFCCC. 2023. [Sharm El-Sheik Dialogue Report](#).

for transparency, risk evaluation, and strategic alignment with the objectives of Article 2.1(c).

4.1 Quantifying the Volumes and Sources of Institutional Investments in Coal Financial Assets

Quantifying institutional investments in South African coal financial assets is crucial to establishing practical operationalisation and implementation steps for Article 2.1(c). This process entails determining the volumes and origins of investments in coal, which would be imperative to raising awareness regarding the magnitude of such investments and their implications for climate change and the financial sector. Accordingly, this would promote transparency and accountability within the financial sector. By shedding light on which institutions are involved in coal investments and to what extent, this quantification enables stakeholders to hold financial institutions responsible for their investment choices, including facilitating the formulation of policies and measures aimed at reducing investments in coal, such as just transitions, energy divestment campaigns and regulatory frameworks, including incentives for renewable energy alternatives.

Moreover, quantifying investments in coal financial assets is crucial to identifying key stakeholders and supporting engagement efforts. Advocacy groups, investors committed to Quantifying institutional investments in South African coal financial assets is crucial to establishing practical operationalisation and implementation steps for Article 2.1(c). This process entails determining the volumes and origins of investments in coal, which would be imperative to raising awareness regarding the magnitude of such investments and their implications for climate change and the financial sector. Accordingly, this would promote transparency and accountability within the financial sector. By shedding light on which institutions are involved in coal investments and to what extent, this quantification enables stakeholders to hold financial institutions responsible for their investment choices, including facilitating the formulation of policies and measures aimed at reducing investments in coal, such as just transitions, energy divestment campaigns and regulatory frameworks, including incentives for renewable energy alternatives.

Moreover, quantifying investments in coal financial assets is crucial to identifying key stakeholders and supporting engagement efforts. Advocacy groups, investors committed to addressing climate change, and civil society organisations can utilise this information to engage with financial institutions and

encourage them to adopt more sustainable investment practices that align with the goals of the Paris Agreement. Furthermore, quantifying investments in coal financial assets helps assess the risks associated with transitioning away from coal (see Table 2 above). It would enable a better understanding of the financial institutions most exposed to these risks, facilitating the development of strategies to manage and mitigate such risks within the context of effectively operationalising and implementing Article 2.1(c). This information is indispensable for planning a just and equitable transition to a low-carbon economy, which South Africa is currently undertaking.

Utilising comprehensive group-level investment data from the Global Coal Exit List (GCOEL) collected as of October 2023,⁵⁶ this section of the pathway paper quantifies the volumes and sources of institutional investments in South African coal financial assets that should be redirected towards pathways to low GHG emissions. This pathway paper also thoroughly analyses institutional investment trends in coal-related assets by leveraging this dataset.

4.1.1 Investments in South African Coal Companies by Investor Type and Asset Class

The findings depicted in Figure 5 show that the total value of investments in South African coal assets held by institutional investors is estimated at approximately 13.8 billion USD. This capital allocation is further disaggregated into 7.1 billion USD in bond holdings and about 6.7 billion USD invested in shares of coal-listed companies.

The South African coal industry is dominated by eight companies engaging mostly in mining and power activities, followed by services (based on level of investment), as shown in Table 3. Sasol and Eskom are the principal stakeholders in coal, accounting for nearly 8.5 billion USD and 8 billion USD, respectively. Sasol's investment portfolio predominantly comprises shares (80.3%) with a smaller bond holding (19.7%), while investments in Eskom are exclusively in the form of bonds, held chiefly by 120 institutional investors in the coal sector. Coal activities account for more than 70% of the revenue share in most of these companies, including Eskom, with a coal revenue share of about 85%, thus signifying the need to diversify the energy mix and, by extension, the revenue stream.

The top ten of the 120 South African institutional investors allocating their investments to coal are presented in Table 4. Cumulatively, these investors hold approximately 94.97% (13

⁵⁶ [Global Coal Exit List \(GCOEL\)](#): Updated October 2023

billion USD) of coal investments in South Africa, illustrating their market dominance. About 38.7% of these investments comprise bonds and 61.3% of shares. However, the top investor (GEPF) holds 92% of its investments in bonds and only 8% in shares. Notably, the top two investors – GEPF and the PIC – are heavily invested in Eskom and Sasol, respectively, with the PIC being one of the leading investors in Sasol.

Among the various types of institutional investors, asset and investment managers are the leading investors in the coal sector, constituting over half of the institutional investors within the top ten. Collectively, they hold a total combined investment of 5.174 billion USD. The top ten investors also include three non-banking financial institutions, namely insurance companies, taking up two spots in the top ten. As further seen in Table 3, it features a commercial bank (Standard Bank)

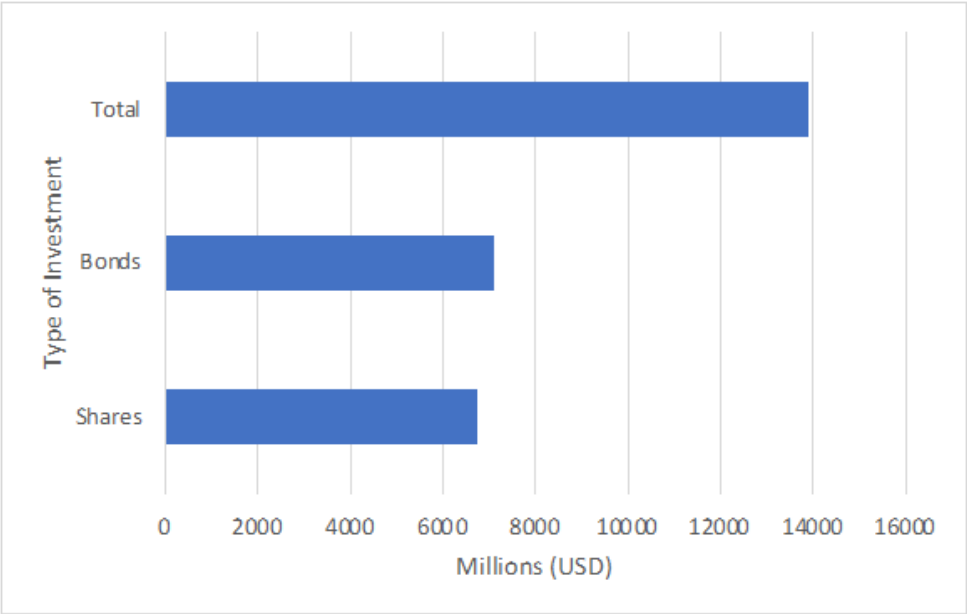


Figure 5: Total Institutional Investments in South African Coal Financial Assets.

Source: Authors own tabulation using group-level investment data from GCOEL (2023)

While the investments by Standard Bank are relatively low compared to other institutional investors in the top ten, it has a more balanced portfolio holding than other investors, with 57% held in shares and 43% in bonds. Within these top ten coal investors, asset and investment managers hold 39.27% of the total investment, with the majority in shares (92.3%), pension funds holding 56.44%, the majority in bonds (91.5%), insurance

companies holding 3.23%, with the majority in bonds (91.29%) and commercial banking approximately 1.1%, with the majority in shares (56.8%). Overall, 57.76% of the total investment is held in bonds. Aside from direct investments, the commercial banking sector indirectly facilitates institutional investors through deal-making, including banking services and products.

Table 3: Institutional Investments in the Top 8 South African Coal Companies

	Company	Shares (USD, Millions)	Bonds (USD, Millions)	Total (USD, Millions)	Core Industry Sector	Share of Revenue
1	Sasol Ltd	7081	1.487	8568	Mining, Power	Data not available
2	Eskom Holdings SOC Ltd		8.008	8008	Power	>85%
3	Exxaro Resources Ltd	2325	3	2.328	Mining	>70%
4	Transnet SOC Ltd		1192	1192	Services	21%
5	Thungela Resources Ltd	895		895	Mining	>90%
6	Grindrod Ltd	169		169	Services	<10%
7	Industrial Development Corporation of South Africa Ltd		103	103	Mining	<10%
8	Wescoal Holdings Ltd	1		1	Mining, Services	>70%

Source: Authors own tabulation using group-level investment data from the [GCOEL \(2023\)](#)

Table 4: Top 10 South African Institutional Investors in the Coal Sector

Rank	Name	Shares (USD, Millions)	Bonds (USD, Millions)	Total (USD, Millions)	Investor Type
1	Government Employees Pension Fund	627	6801	7,428	Pension Fund
2	Public Investment Corporation	3386		3.386	Asset/Investment Manager
3	Ninety One	789	127	916	Asset/Investment Manager
4	Coronation Fund Managers	547	1	547	Asset/Investment Manager
5	Sanlam	251	34	285	Insurance
6	Standard Bank	87	66	153	Commercial Banking
7	PSG Konsult	137	3	140	Insurance
8	Fairtree Capital	119	2	122	Asset/Investment manager
9	Truffle Asset Management	109		109	Asset/Investment Manager
10	36ONE Asset Management	94		94	Asset/Investment Manager

Source: Authors own tabulation using group-level investment data from the [GCOEL \(2023\)](#).

Figure 6 illustrates that the leading investors in coal are asset and investment managers, with most of their investment holdings in shares, followed by pension funds, which hold most of their investments in bonds. It is further shown that insurance

companies have a stronger appetite for shares than bonds, indicating their preference for short-term rather than long-term security

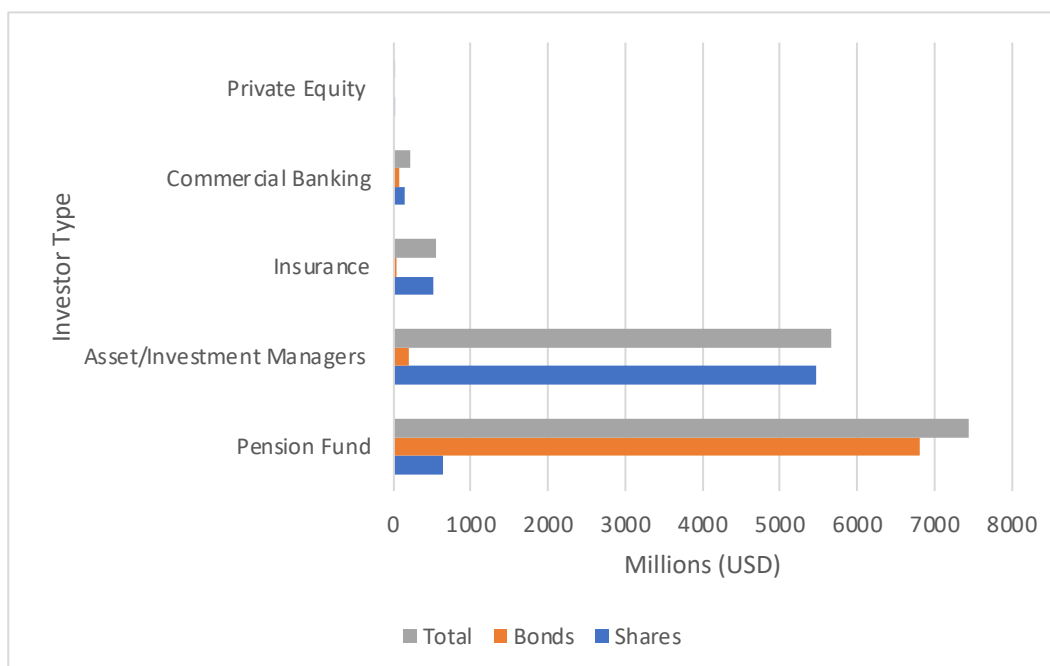


Figure 6: Institutional Investments in Coal by Investor Type.

Source: Authors own tabulation using group-level investment data from GCOEL (2023)

4.1.2 Investments in Eskom Bonds by Investor Type and Country

The previous analysis has provided a comprehensive overview of the characteristics of investments in the coal sector in South Africa. Acknowledging that the focus of this paper is to decarbonise the South African energy sector, specifically the use of coal for electricity generation, the analysis below focuses on institutional investments in Eskom's coal financial assets. As Eskom is an SOE, most of its financial assets are in the form of

bonds held by various institutional investors to the amount of 8,008 billion USD (see Table 4 above). Within the context of operationalising Article 2.1(c), it is important to consider the nature of financial flows to be redirected, that is, domestic versus international or private versus public flows. Figure 7 presents an aggregate of investments into Eskom bonds by various institutional investors headquartered worldwide. Notably, 72% of investments into Eskom bonds are held in South Africa, followed by 13.1% from the United States and 5.7% in Germany.

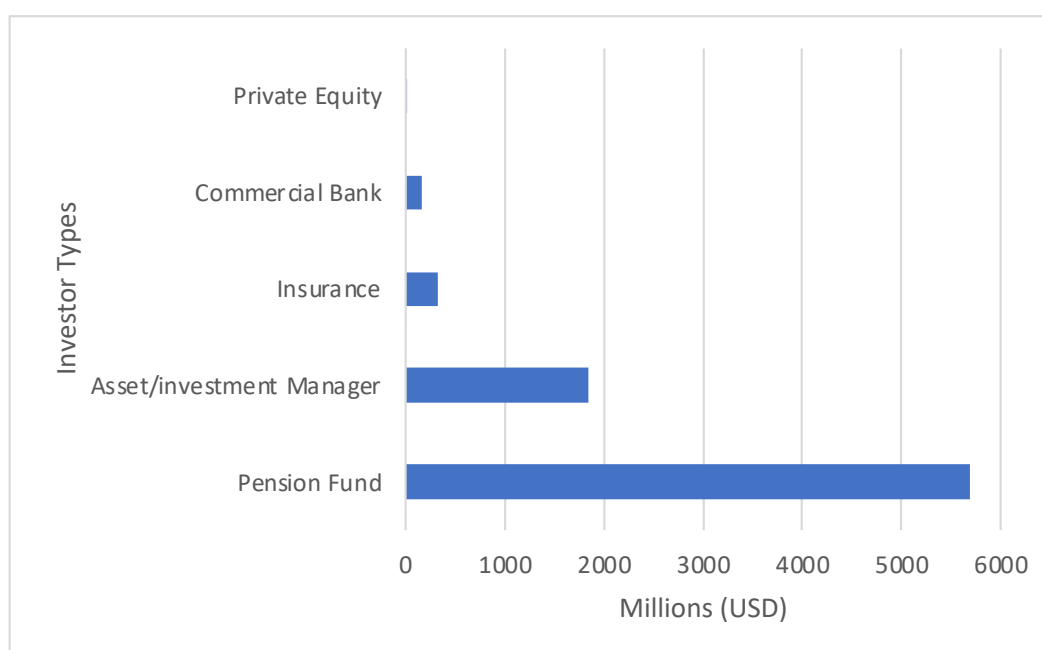


Figure 7: Institutional Investments in Eskom Bonds by Country.

Source: Authors own tabulation using group-level investment data from GCOEL (2023)

In terms of the distribution of types of institutional investors in Eskom, Figure 8 shows that pension funds are the most substantial investors, with a total of 5.7 billion USD, followed by asset/investment managers holding 1.8 billion USD in investments. Insurance companies rank third, holding 331 million USD, with commercial banking following with 160 million USD. Finally, private equity displays the smallest investment, with an amount of 6 million USD

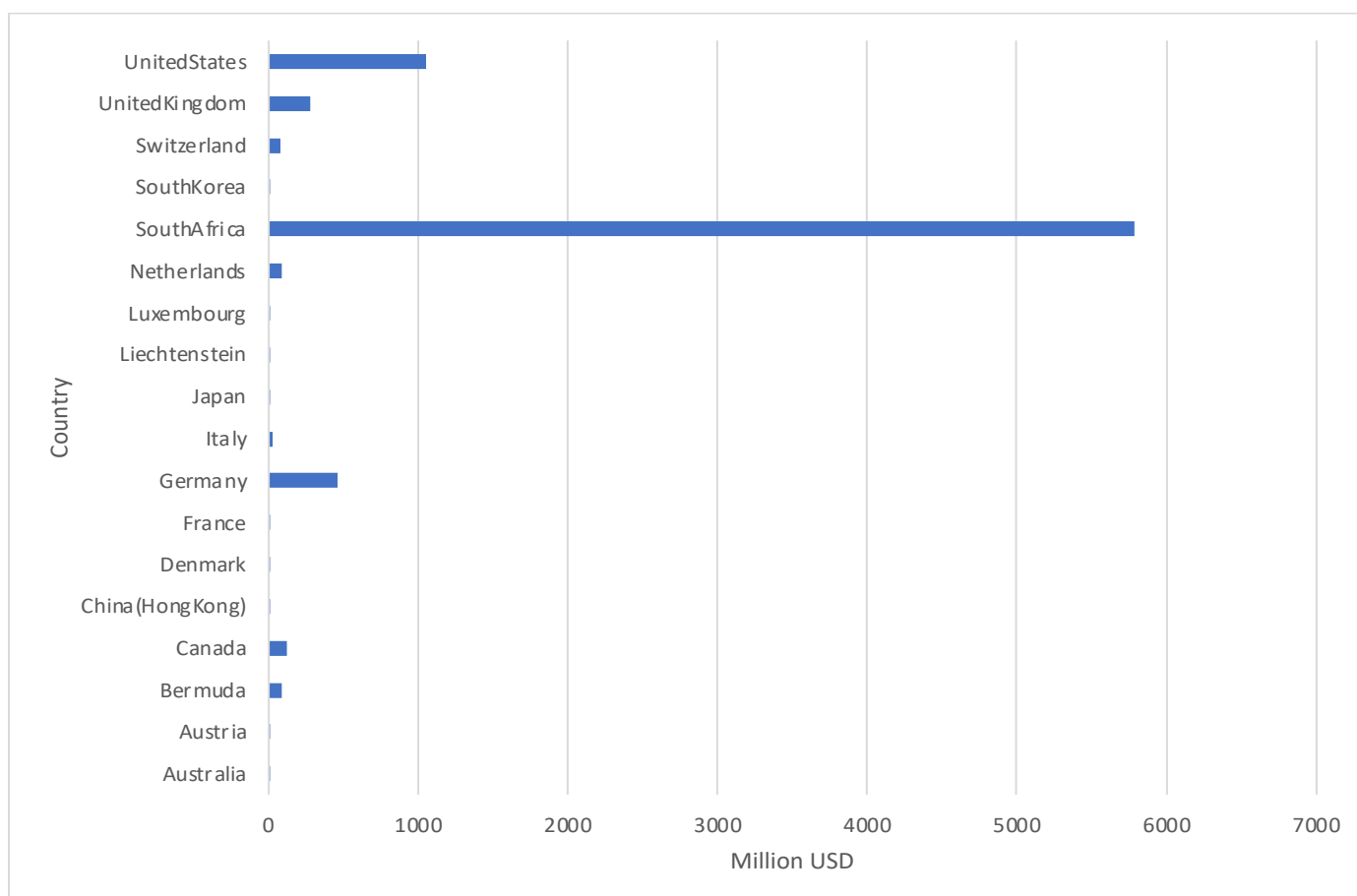


Figure 8: Institutional Investments in Eskom Bonds by Investor Type.

Source: Authors own tabulation using group-level investment data from GCOEL (2023)

Examining the distribution of investments in Eskom bonds, which is an integral component of this analysis, Table 5 shows that the South African GEPF holds the most substantial portion of investments in Eskom bonds, totalling 5.5 billion USD. Following GEPF, Allianz, a prominent German institution, holds a significant investment of nearly half a billion units of currency in Eskom bonds. Notably, most of the top ten institutional investors are from the United States, signifying their dominance in this particular sector. However, it is worth mentioning that, apart from GEPF, Ninety One, another South African institutional investor, ranks ninth on the list, with a modest investment of 84 million USD in Eskom bonds. Therefore, two South African investors feature in the top ten investors in Eskom. However, there are an additional 23 South African institutions with holdings in Eskom bonds, as shown below in Table 6.

4.2 Financial Performance and Risks Associated with Coal Investments in South Africa

Institutional investments in South Africa's coal sector entail a range of risks that necessitate careful consideration. The foremost concern pertains to significant environmental risks associated with coal extraction and utilisation, encompassing air and water pollution, deforestation, and GHG emissions. The country's heavy reliance on coal for electricity generation has resulted in substantial carbon emissions, rendering the industry susceptible to more stringent environmental regulations, potential carbon pricing mechanisms, and the financial obligations associated with environmental damage and remediation.

Furthermore, institutional investors in the coal sector face regulatory challenges, as the South African government actively advocates for renewable energy sources and endeavours to transition away from coal to mitigate carbon emissions. This commitment to combat climate change and address local concerns about air pollution may manifest in imposing stricter emission standards, renewable energy targets, or implementing a carbon tax. Such regulatory measures can impact the profitability and viability of institutional coal investments while simultaneously escalating compliance costs.

A combination of financial and environmental risks emerging from the energy crisis in South Africa is the declining revenue due to suboptimal electricity generation and the rising costs associated with

mitigating measures for the energy crisis⁵⁷. A decline in Eskom's revenue has implications for debt servicing and could lead to another government bailout to support Eskom's operations. As Eskom's power generation is still predominantly coal-based, any such bailout would, in principle, constitute a fossil fuel subsidy. This presents a challenge to South Africa's commitment to realising the objectives of Article 2.1(c). As the Russia/Ukraine war has induced a global energy crisis, noting that Russia is the second largest gas supplier globally, many countries worldwide have strongly increased investment in coal. As much as South Africa, particularly Eskom, would have benefitted from the increased global coal demand, its energy system faces challenges due to weak infrastructure, mismanagement and systemic failures. Thus, it could not capitalise on the increased global demand for coal, and the debt defaulting risk remains.

Financial risks represent an additional facet of concern within the coal sector. The mounting public pressure to divest from fossil fuels presents reputational risks that can influence the value and marketability of coal assets held by institutional investors. The

global shift towards cleaner energy alternatives and apprehensions surrounding stranded assets compound financial risks. Declining demand for coal can precipitate price decreases, thereby diminishing the profitability of institutional coal investments. Moreover, the expense associated with coal mining and extraction may escalate due to stringent regulations, labour disputes, or the necessity for costly remediation measures, consequently exerting adverse effects on the financial performance of coal companies in which institutional investors hold stakes.

Furthermore, market risks necessitate consideration as well. The international trend towards reducing coal consumption and the diminishing costs of renewable energy pose a long-term threat to the demand for coal⁵⁸. As countries embrace cleaner energy alternatives, the coal market may contract, leading to reduced prices and potential financial losses for institutional investors in the sector. Additionally, social risks should not be disregarded. The coal industry frequently encounters opposition from local communities and environmental activists due to its harmful social impacts, including health hazards, community displacement, and ecological destruction. Institutional investments in the coal sector may consequently be subject to social risks, encompassing protests, legal challenges, and reputational harm, all of which can disrupt operations and impede investor returns.

In summary, effectively navigating these risks requires that institutional investors in the coal sector diligently evaluate the evolving energy landscape, contemplate diversification strategies, conduct comprehensive due diligence, and assess the long-term viability and sustainability of their coal investments. Understanding and managing these risks are indispensable for making well-informed investment decisions within South Africa's coal sector

⁵⁷ UNECA. 2018. [Energy Crisis in Southern Africa: Future Prospects](#).

⁵⁸ IEA. 2023. [Global Coal Demand Expected to Decline in Coming Years](#).

Table 5: Top 10 Investors in Eskom Bonds

Rank	Name	Total Bonds (USD, Millions)	Investor Type	Country
1	Government Employees Pension Fund	5588	Pension Fund	South Africa
2	Allianz	441	Insurance	Germany
3	M&G	218	Asset/Investment Manager	United Kingdom
4	BlackRock	207	Asset/Investment Manager	United States
5	TCW Group	126	Asset/Investment Manager	United States
6	Fidelity Investments	120	Asset/Investment Manager	United States
7	Sun Life Financial	96	Insurance	Canada
8	Prudential Financial (US)	92	Asset/Investment Manager	United States
9	Ninety One	84	Pension Fund	South Africa
10	TIAA	83	Asset/Investment Manager	United States

Source: Authors own tabulation using group-level investment data from the [GCOEL \(2023\)](#).

Table 6. South African Investors in Eskom Bonds

Rank	Name	Total Bonds (USD Millions)	Investor Type
1	Government Employees Pension Fund	5.588	Pension Fund
2	Ninety One	84	Pension Fund
3	Standard Bank	41	Commercial Banking
4	Granate Asset Management	20	Asset/Investment Manager
5	Sanlam	16	Insurance
6	The Hollard Insurance Company	5	Insurance
7	Alexander Forbes	3	Insurance
8	Sygnia	3	Insurance
9	PSG Konsult	3	Insurance
10	Fairtree Capital	2	Asset/Investment Manager
11	Visio Capital Management	2	Asset/Investment Manager
12	Efficient Group	2	Asset/Investment Manager
13	Vunani	2	Asset/Investment Manager
14	Sasfin	1	Asset/Investment Manager
15	Absa Group	1	Commercial Banking
16	MMI Holdings	1	Insurance
17	Personal Trust	2	Asset/Investment Manager
18	Ampersand Asset Management	1	Asset/Investment Manager
19	FirstRand	1	Asset/Investment Manager
20	Argon Asset Management	1	Asset/Investment Manager
21	Anchor Group	1	Asset/Investment Manager
22	Warwick Funds	1	Asset/Investment Manager
23	Taquanta Investment	1	Asset/Investment Manager
24	Kagiso Asset Management	1	Asset/Investment Manager

Source: Authors own tabulation using group-level investment data from the [GCOEL \(2023\)](#)

5 ENABLING ARTICLE 2.1(C): OPERATIONALISATION MARKET DYNAMICS AND POLICY LEVERS

Focusing on implementing Article 2.1(c) of the Paris Agreement, specifically within the context of the South African financial sector, this section begins by providing an overview of the regulatory bodies governing the financial sector in South Africa, emphasising their efforts to address climate risks. The Prudential Authority's establishment of the Prudential Authority Climate Think Tank (PACTT) and plans for regulatory guidance on climate-related risks are highlighted. The section discusses various policies and frameworks, including the Green Finance Taxonomy (GFT) and the Pension Funds Act, emphasising the voluntary nature of the GFT and the need for potential mandatory disclosures in the future. The role of pension funds, insurance, commercial banking, development finance institutions, and the Johannesburg Stock Exchange in responding to climate-related challenges is explored, with a particular focus on the need for clear targets and ambitions. Additionally, the section delves into the role of government and policy tools in aligning financial flows with climate goals, emphasising the importance of a holistic approach, government-led tools, and incentives for aligning financial flows with the Paris Agreement. The discussion also touches on the interconnectedness of global financial systems and the potential challenges and opportunities presented by operationalising Article 2.1(c) at the national level, considering factors like economic incentives, financial market transitions, and the unique narratives of different nations in addressing climate change.

5.1 Overview of Climate Change Regulations and Policies in the South African Financial Sector

The financial sector in South Africa operates under the oversight of several key institutions, including the SARB, the Financial Sector Conduct Authority (FSCA), and the Prudential Authority (PA), as presented in Figure 9⁵⁹. The SARB is the central bank and is responsible for maintaining monetary stability. The FSCA regulates the conduct of financial institutions in accordance with the Financial Sector Act (FSA) of 2017⁶⁰. The PA supervises the safety and stability of banks and insurers. These regulatory bodies strive to establish a stable, trustworthy, and well-governed financial environment.

The Prudential Authority has established the Prudential Authority Climate Think Tank (PACTT) to coordinate the regulatory and supervisory response to climate risks faced by regulated entities. In 2023, the PA plans to issue regulatory guidance on climate-related risks⁶¹. This guidance will ensure that financial institutions under its supervision integrate climate risks into their risk management, governance, and reporting processes. By aligning with international standards, these efforts will enhance transparency, disclosure, and the quality of information provided by financial institutions.

The SARB is considering conducting climate stress tests for the South African economy.⁶² The purpose of these stress tests is to identify, quantify, and mitigate systemic climate risks that could affect the overall stability of the economy and the financial sector. The SARB aims to align with global central banks and regulators in addressing climate-related risks and improving the financial system's resilience. One example is the consideration of climate scenarios proposed by the Network on Greening the Financial System (NGFS)⁶³.

South Africa has and continues to implement various policy and regulatory frameworks to enable the alignment of financial flows with the Paris Agreement. The most recent addition is the Green Finance Taxonomy (GFT). The GFT, responding to recommendations from the National Treasury's 2021 Technical Paper, provides guidelines for integrating climate-related risks into financial institutions' risk management and disclosure processes⁶⁴. It facilitates investments in 'green' and climate-related projects aligned with South Africa's sustainable policies and priorities. However, it is important to note that the GFT is currently voluntary, unlike taxonomies in other regions, such as the EU. There is ongoing research to explore the potential for mandatory taxonomy-related disclosures in the future.

The Pension Funds Act of South Africa, particularly Regulation 28, promotes responsible investing based on a sustainable, long-term, risk-aligned, and liability-driven investment philosophy⁶⁵. When making investment decisions, funds and their boards must consider factors that may materially impact the asset's long-term performance, including environmental, social and governance (ESG) considerations.

⁵⁹Government of the Republic of South Africa. 2017. [Financial Sector Regulation Act](#).

⁶⁰ Ibid.

⁶¹ Ibid.

⁶² SARB testing – South African Reserve Bank. 2022. [A Climate Change Modelling Framework for Financial Stress Testing in Southern Africa](#).

⁶³ Ibid.

⁶⁴ Green finance – Department of National Treasury. 2022. [Green Finance Taxonomy](#).

⁶⁵ Department of National Treasury. 1965. [Pension Funds Act](#).

Regulation 28 applies to delegated entities such as asset managers and consultants. The FSCA has issued guidance notes outlining the Authority's expectations for retirement funds,

including the inclusion of sustainability considerations in investment policies and reporting on sustainability issue

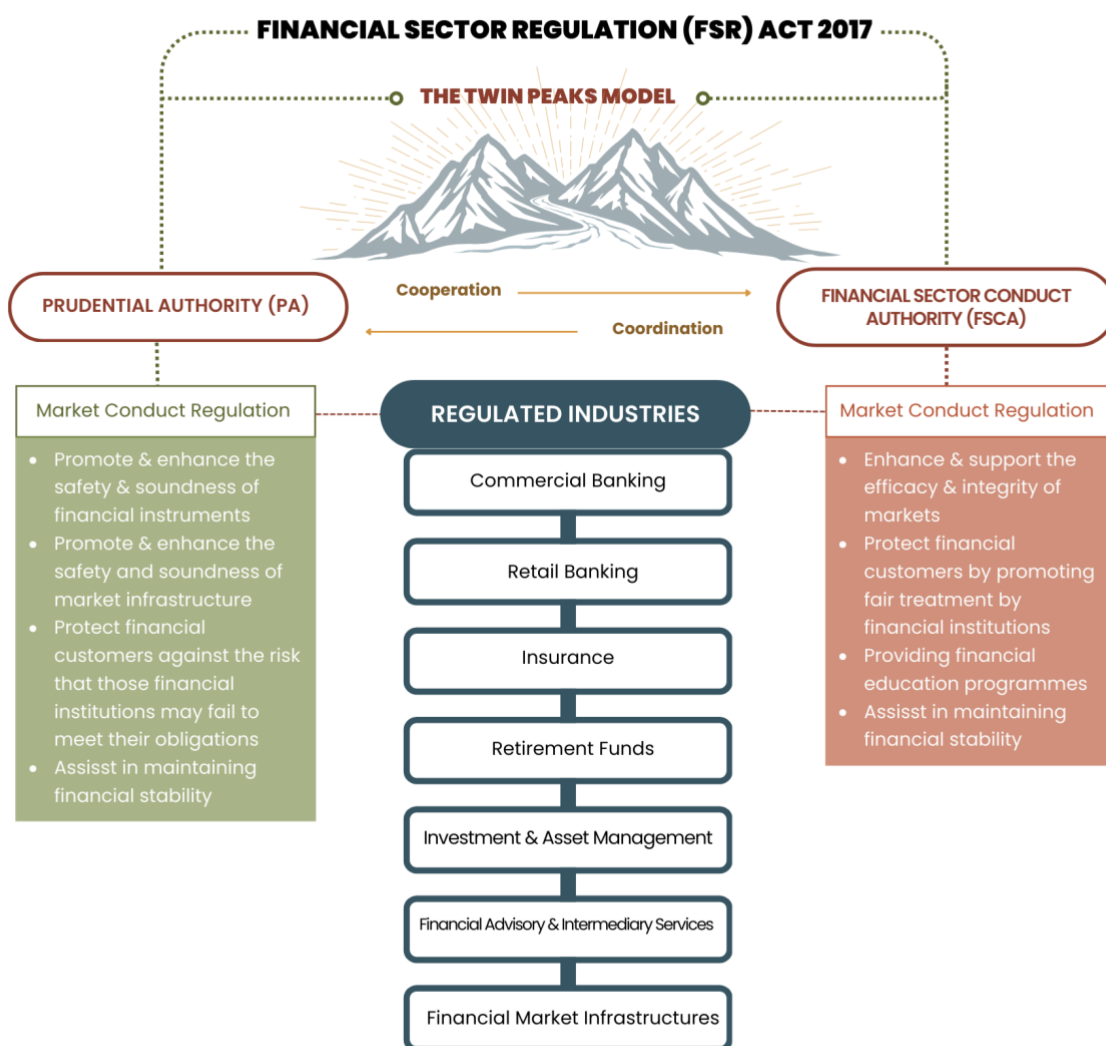


Figure 9: The South African financial system regulatory landscape

Source: FSCA (2022)

5.2 State of Financial Sector-Related Responses to Article 2.1(c) in South Africa

There has been growing pressure globally on financial institutions to play an increasing role in financing climate action and sustainable development by integrating ESG considerations into investment portfolios and processes⁶⁶. Much of this pressure has been focused on enticing financial institutions and actors to make voluntary commitments to shift their investments and financial assets to climate-adjusted economic and financial activities. However, this raises key concerns about whether the full actualisation of Paris Agreement targets will be met by making

climate action voluntary, as opposed to mandatory, among key actors and institutions.⁶⁷ Enacting mandatory climate policies, standards, and laws would drive climate action. While the imperative to address climate change is evident, the journey from promulgating climate laws to effective policy implementation is a complex and time-consuming process. The translation of these laws into actionable policy, particularly in developing countries, encounters significant hurdles. Notably, a lack of technical capabilities, insufficient data, and the absence

⁶⁶ OECD. 2022. [Policy guidance on market practices to strengthen ESG investing and finance a climate transition](#).

⁶⁷ Harvard Business Review. 2022. [How Sustainability Efforts Fall Apart](#).

of standardised institutional frameworks hinder adherence to mandatory disclosures.

This gap is particularly pronounced in developing nations, where the challenges are multifaceted. However, there is a glimmer of progress, especially in South Africa. Financial institutions in the country are gradually recognising the urgency to shift away from fossil fuels and embrace a more sustainable investment approach⁶⁸. Some institutions are not merely acknowledging the need for change but are actively committing to reducing their exposure to fossil fuels while concurrently increasing investments in renewable energy^{69,70}.

This evolving landscape within South African financial institutions suggests a growing awareness of the environmental and financial risks associated with fossil fuel investments. The transition towards sustainable portfolios is indicative of a broader acknowledgement of the interconnectedness between environmental responsibility and financial prudence. Nevertheless, the road ahead requires continuous effort to bridge the existing gaps in data, institutional frameworks, and technical capabilities in order to foster a more comprehensive and effective approach to climate action within the financial sector.

5.2.1 Pension and Provident Funds

In the broader financial sector in South Africa, pension and provident fund management sectors are at the forefront of transitioning towards a low-emissions economy. Despite this positive trend, a significant proportion of pension and retirement funds (approximately 87%) lack specific policies supporting green or climate finance investments. Nevertheless, approximately ZAR 40 billion is invested in green assets by retirement funds, which accounts for around 0.35% of the total assets under management (ZAR 4.256 trillion). Of the 139 South African pension funds surveyed, 119 reported some private equity investment, focusing on renewable energy (81%) and transport (55%) infrastructure. Investments in fossil-based energy were comparatively lower at 27%. However, most retirement funds allocate less than 10% of their investments to green or climate-focused assets.

While many retirement funds have shown a willingness to increase investment allocations to green and climate-focused investments, there is a need for clear targets and ambitions. Currently, 90% of funds lack specific targets for investments in green, climate, social, or sustainability-focused initiatives by 2025

and 2030. Despite this, 82% of funds express their desire to support a collective target or pledge by the pension fund sector on sustainability-focused investments by 2025.⁷¹ Asset managers' fiduciary obligations, prioritising short-term financial returns and risk mitigation, can hinder increased climate action and limit capital allocation to sustainable and low-carbon projects. To address this, redefining fiduciary duties to encompass climate considerations and incorporating ESG criteria can enable asset managers to contribute to advancing climate action while fulfilling their obligations to clients.

South Africa's largest pension fund, the Government Employees Pension Fund (GEPF), not only plays a crucial role in the national context but also is the largest pension fund in Africa. The GEPF recognises climate change as a critical investment policy and risk assessment consideration. The GEPF integrates ESG principles to manage risks and ensure sustainable, long-term investments⁷². The Public Investment Corporation (PIC), responsible for most GEPF investments, is updating its climate policy statement and net-zero action plan to align with the goals of the Paris Agreement⁷³.

5.2.2 Insurance Sector

The insurance sector in South Africa is directly impacted by climate change, as climate-related risks affect the insurability of policyholder assets and insurers' operations and investments. The insurance industry recognises the rising effects of climate change and is taking independent action to mitigate risks. For example, some insurers have divested companies with significant revenue from thermal coal⁷⁴. Insurance companies have opportunities to develop climate-focused solutions, such as ensuring a net-zero transition, creating risk transfer solutions, and providing adaptation and resilience services. By aligning their investment strategies and limiting insurance coverage of fossil-based projects, insurers can signal their commitment to the goals of the Paris Agreement.

5.2.3 Commercial Banking Sector

The South African commercial banking sector institutions recognise the importance of addressing climate change and integrating climate risk into their operations and investment decisions. A survey conducted in the country revealed that 54% of banks viewed climate as a strategic issue, indicating a growing awareness of the risks posed by climate change. Furthermore, over 40% of banks had dedicated staff working on climate-

⁶⁸ IPCC. 2023. [The South African Climate Finance Landscape](#).

⁶⁹ Reuters. 2022. [Standard Bank Aims for Net Zero by 2050](#).

⁷⁰ FirstRand. 2022. [Report to Society](#).

⁷¹ IFC. 2022. [Sustainable Finance Practices in South African Retirement Funds](#).

⁷² GEPF. 2017. [GEPP Responsible Investment Policy](#).

⁷³ PIC. 2023. [Corporate Plan](#).

⁷⁴ NinetyOne. [Sustainable Investing 2.0: What Part Should South African Retirement Funds Play?](#)

related opportunities⁷⁵. All five major South African banks (Standard Bank, First Rand Group, Investec, Nedbank, and ABSA) are signatories to the Financial Stability Board's Task Force on Climate-related Disclosures (TCFD) and now publish annual TCFD reports⁷⁶. A recent independent analysis conducted by JustShare on the banks' TCFD climate reporting reveals initial progress in complying with the TCFD's thematic disclosure guidelines. The banks perform relatively well in the Metrics and Targets area, which focuses on establishing and implementing internal frameworks for climate-related actions. However, the report highlights room for improvement in the other three thematic areas of Risk Management, Governance, and Strategy⁷⁷.

Additionally, all five banks acknowledge the importance of developing effective climate change and energy transition strategies. In their 2021 Annual Integrated Reports, they clearly express their commitment to facilitating the transition of the South African economy from high-carbon activities to cleaner energy sources. Several banks, such as Standard Bank, Nedbank, and FirstRand, have even pledged to cease financing new coal-fired power plants^{78,79,80}.

5.2.4 Development Finance Institutions

While development banks and finance institutions play a crucial role in supporting low-emission, resilient development in developing countries, South Africa has a notable challenge. Despite their pivotal role in advancing sustainable development, these institutions continue to invest heavily in fossil fuels. The Fair Finance Coalition of South Africa highlighted that even the two largest DFIs, the Development Bank of Southern Africa (DBSA) and the Industrial Development Corporation (IDC), are substantial investors in fossil fuels⁸¹.

The DBSA has issued a net-zero investment statement, underlining its commitment to the Just Transition. It has introduced a comprehensive Just Transition Investment Framework, a Climate Policy Framework, and a Green Bond Framework. However, there remains uncertainty regarding whether these policies and frameworks include specific targets to reduce greenhouse gas emissions or explicitly outline intentions to avoid or limit further investment in fossil-based companies. Similarly, neither the PIC nor the IDC publicly disclose

their investment policies or portfolios, and they do not explicitly commit to phasing out investments in fossil fuels.

Enforcing the disclosure of information about targets, progress, and policies is crucial for operationalising Article 2.1(c). This transparency is necessary to track the credible reallocation of capital away from high-carbon activities and align these institutions with the broader goals of sustainable development.

5.2.5 Johannesburg Stock Exchange

The Johannesburg Stock Exchange (JSE) is also at the forefront of promoting the alignment of financial flows with low-carbon and climate-resilient development pathways. The JSE has introduced the Sustainability Disclosure Guidance, voluntarily encouraging the integration of climate considerations into investment decisions⁸². The JSE has also established a Transition Segment, providing a platform on the JSE's Main Board to list Transition Debt Securities, where issuers can raise funds for climate or Just Transition-related purposes⁸³. In South Africa, the integration of standards is still in its early stages, and the full impact of declining investments in fossil-backed sectors is yet to be realised. However, there is an emerging trend in this direction, which is anticipated due to the growing number of international standards exerting mounting pressure on listed equities to align with low-carbon and climate-resilient investments.

5.3 The Role of Government and Policy Tools in Enabling Article 2.1(c) Alignment

In accordance with the perspective outlined in this pathway paper, the pivotal roles of governments and policymakers are underscored, emphasising their responsibility and accountability under the Paris Agreement as national custodians and principal signatories. It is imperative to comprehend how the incentives and disincentives embedded in the Agreement impact the alignment of financial flows, particularly concerning Article 2.1(c). Acknowledging this, the COP28 Presidency recognised the crucial role of government in facilitating and driving Article 2.1(c)-related to progress. This involves coordinating relevant ministries, establishing suitable and effective enabling frameworks, and formulating policies to guide public and private actors in aligning financial flows with low-emission and climate-resilient development.

Furthermore, the COP28 Presidency emphasised the importance of monetary authorities, central banks and financial supervisors

⁷⁵ European Investment Bank (EIB). 2021. [Finance in Africa: for green, smart and inclusive private sector development](#).

⁷⁶ Task Force on Climate-related Financial Disclosures.

⁷⁷ JustShare. 2023. [How Cool is Your Bank?](#)

⁷⁸ Standard Bank. 2021. [Annual Integrated Report](#).

⁷⁹ Nedbank. 2021. [Integrated Report](#).

⁸⁰ First Rand. 2021. [Annual Integrated Report](#).

⁸¹ FairFinance. 2022. [Understanding South African Development Finance Institutions to promote accountability](#).

⁸² JSE. 2022. [JSE Climate Disclosure Guidance](#).

⁸³ JSE. 2022. [JSE amends debt listing requirements to introduce Transition Segment](#).

in managing financial flows. The complexities and challenges associated with involving the private sector are also acknowledged. It is crucial to mobilise the private sector, recognising the obstacles within private finance flows. When pursuing pathways for the structural transformation of the financial service sector, a holistic examination of the entire financial system is necessary. This approach aims to ensure a comprehensive alignment of financial flows, avoiding a disjointed or fragmented realignment.⁸⁴

In addition to understanding the current funding landscape of the financial sector, it is essential to assess how financial institutions fit into the broader ecosystem of aligned, nationally appropriate development pathways. This involves scrutinising investment portfolios, understanding mandates from individuals, government or SOEs, and identifying suitable tools and levers (policy/regulatory) to foster a realignment in line with the objectives of Article 2.1(c).

For example, the risk-return fundamentals associated with climate-aligned investments drive behavioural change among corporate actors within the financial sector. Incorporating climate-aligned investment strategies into the institutional directions of asset managers can direct investments away from high-carbon assets.

Achieving simultaneous decarbonisation and increased renewable energy investment requires both public and private finance flows. The alignment of the financial system with the goals of the Paris Agreement is paramount for this purpose. Consequently, a holistic financial system transformation, consistent with the Paris Agreement, necessitates additional regulatory, structural, and capacity-building efforts for both public and private flows.

The operationalisation of Article 2.1(c) requires the financial sector to play an essential stewarding role, redirecting investment to new asset classes and opening new markets conducive to achieving global net zero emissions by mid-century. As primary mechanisms for Article 2.1(c) operationalisation at the national level, national governments

can leverage various tools outlined in Table 7, including legislation, regulation, fiscal policy measures, monetary policy measures, and influence over budget provisions for public services and infrastructure. These tools, detailed in a framework by Whitley et al.,⁸⁵ aim to support governments and non-state actors in shifting, tracking and increasing financial flow alignment with Article 2.1(c).

Various additional guidelines have emerged after the ratification of the Paris Agreement insofar as they assist policymakers, regulators and the financial sector in harmonising their efforts to attain alignment. For example, the International Development Finance Club⁸⁶ offered six starting principles to its members in how to respond to the issue of Paris Agreement alignment, namely:

- Increasingly mobilise finance for climate action.
- Support country-led climate-related policies.
- Catalyse investments and mobilise private capital.
- Invest in adaptation and resilience.
- Support the transition from fossil fuels to renewable energy.
- Support the internal transformation of institutions.

The interplay between policymakers, regulators and financial sector professionals at a national level is an important consideration. Depending on the jurisdiction of a nation's financial market, there can be varying levels of international and regional influence exerted on the cross-border flows of financial resources. As such, the interconnectedness of the global financial system will mean that policy and fiscal measures taken to align financial flows in one sovereign fiscal jurisdiction will potentially have a transferred impact on another (and vice versa). Overall, interventions across these four tools will be critically important for coordinating financial flows with the Paris Agreement. Governments can aid in accelerating the shift to a low-emission economy and achieve the Paris Agreement's goals by providing incentives for investment in sustainable infrastructure and technologies, promoting the development of green financial markets, and encouraging the disclosure of climate-related financial risks. These actions will create new assets and markets

⁸⁴ Naidoo, C. 2020. [Transcending the interregnum: exploring how financial systems relate to sustainability transition processes](#). Doctoral thesis (PhD). University of Sussex.

⁸⁵ Whitley et al. 2018. [Making finance consistent with climate goals](#).

⁸⁶ Lütkehermöller, K., Kachi, A., Pauthier, A. & Cochran, I. 2021. [Operationalization Framework on Aligning with the Paris Agreement](#).

Table 7. Government-led tools to encourage the consistency of finance flows with climate ambitions

Financial policies and regulations (Primarily influence behaviour through force of law)	Fiscal policy levers (Primarily influence behaviour through price)	Public finance (Primarily influence behaviour by shifting financial risk)	Information instruments (Primarily influence behaviour through awareness)
▪ Lending requirements ▪ Accounting systems ▪ Mandates of supervisory authorities ▪ Standards ▪ Plans and strategies ▪ Disclosure requirements (Where mandatory)	▪ Taxes ▪ Levies ▪ Royalties price support or controls ▪ Public procurement ▪ Budget support (Including the establishment of public funds and finance institutions and state-owned)	▪ Grants ▪ Debt ▪ Equity ▪ Guarantees ▪ Insurance (From public pension funds, sovereign wealth funds and public finance institutions)	▪ Certification and labelling ▪ Transparency initiatives ▪ Corporate Strategies ▪ Awareness campaigns ▪ Statistical services ▪ Scenario analysis and stress testing ▪ Standards ▪ Plans and strategies ▪ Disclosure requirements (Where voluntary)

Source: [Whitley et al., 2018](#).

5.3.1 Incentives and Disincentives for Alignment

The nature of Article 2.1(c) would imply that, over time, investments would shift to support the Paris Agreement's temperature goal and that there would be a phasing-down of investment in fossil fuel-heavy sectors (and the value chains aligned to enabling these sectors). However, the economic incentives, demonstrated by substantial profits from oil majors and sizeable state-owned petrochemical companies during the 2022/2023 financial year, still favour the status quo. Short-to-medium-term incentives, coupled with the 'sunk-cost fallacy' and non-conforming jurisdictions, may perpetuate this trend.

Several observations are proposed in the interplay between policymakers, regulators and the investment community about the use of the tools mentioned above:

- New opportunities for real-economy production of goods and services will create new asset classes for investors. The actions taken will enable the identification of new asset classes and investments (i.e., opportunity scanning and recent acquisition).
- Various incentives and disincentives have emerged, but the signals to economic and financial actors will be varied. The actions taken may make the incentives (and disincentives) to invest in certain parts of national economies more or less attractive (i.e., risk awareness and sensitivity analysis). Indeed, actions may infer incentives and disincentives, but a rational economic agent acting in self-interest may elect to misalign with the Paris Agreement's temperature goal. Moreover, it could be argued that in extreme circumstances, a full operationalisation of Article 2.1(c) is an existential threat

to the economic prosperity of particular nation-states and that this creates varying levels of incentives that could well exacerbate efforts to hold the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuit of efforts to limit the temperature increase to 1.5°C above pre-industrial levels.

- Financial markets are likely to offer increasingly constrained positions in fossil fuel investments with implications for trading partners within a globally connected financial system. A country's financial markets would need to transition to support a nation's positioning in a mid-century global economy that was required to be at net zero emissions. The transition of a country's financial market could impact other jurisdictions, depending on the interconnectedness of trade and foreign financial flows. Furthermore, globally connected value chains are likely to maintain the necessity for an interconnected financial system.
- Each narrative is unique in how Article 2.1(c) operationalisation happens. Still, there is an incentive for national governments to take ownership of the report: The process of alignment will occur over time (i.e., phase down), and this will be done in a manner that is bound within the sovereign national determination of how countries enact the provisions of the Paris Agreement by their ratification. National governments' steps to use some of the four tools highlighted by Whitley⁸⁷ will lead to responses by their constituencies bound by rational economic thinking, taking actions that reduce costs and increase personal benefits. Notwithstanding the existential crisis that climate change creates for the globe (as recognised by the continued

⁸⁷Whitley et al. 2018. [Making finance consistent with climate goals](#).

UNFCCC engagement), it can be inferred that each sovereign state will move at varying paces to operationalise Article 2.1(c) based on a myriad of factors at play within the political economy. However, regardless of speed, it is likely

that a nation's sovereign ability to conduct an orderly operationalisation will become increasingly constrained as the global financial system deepens its alignment with the Paris Agreement.

6 Pathway for Operationalising Article 2.1(c)

Aligning financial flows with the objectives of Article 2.1(c) of the Paris Agreement presents significant challenges for African countries, particularly those with substantial carbon assets. Despite global attention, there remains a lack of comprehensive guidance on effective alignment strategies, hindering progress in this crucial area. The current emphasis on assessing implementation consistency falls short of providing a clear pathway for African nations. To address this gap, it is essential to establish a robust pathway guiding these countries through the necessary steps for aligning financial flows with climate objectives. This pathway, detailed in Figure 10 and subsequent sections, emphasises the concrete implementation of Article 2.1(c)'s long-term objective, which includes restructuring financial flows to support reduced greenhouse gas emissions and resilient development against climate impacts.

The pathway recognises the roles and responsibilities of both governments and the financial system, emphasising

collaboration among public and private sector stakeholders. It acknowledges the unique challenges faced by African countries, such as financial market immaturity and limited depth, while emphasising the principles of equity and CBDR-RC. Furthermore, it emphasises the importance of gradual steps towards tangible advancements in aligning financial flows with low-carbon and climate-resilient investments. Recognising the varying levels of understanding and engagement with multilateral processes across African nations, the pathway outlines a systematic approach to create the necessary conditions for operationalising Article 2.1(c).

Importantly, the pathway operates under the assumption that private sector actors will embrace institutional changes conducive to long-term sustainability. It highlights the necessity of collaboration among government, public, and private sector stakeholders, emphasising the importance of each actor undertaking specific actions to drive progress

PATHWAY TO OPERATIONALISING ARTICLE 2.1(C) OF THE PARIS AGREEMENT IN AFRICA

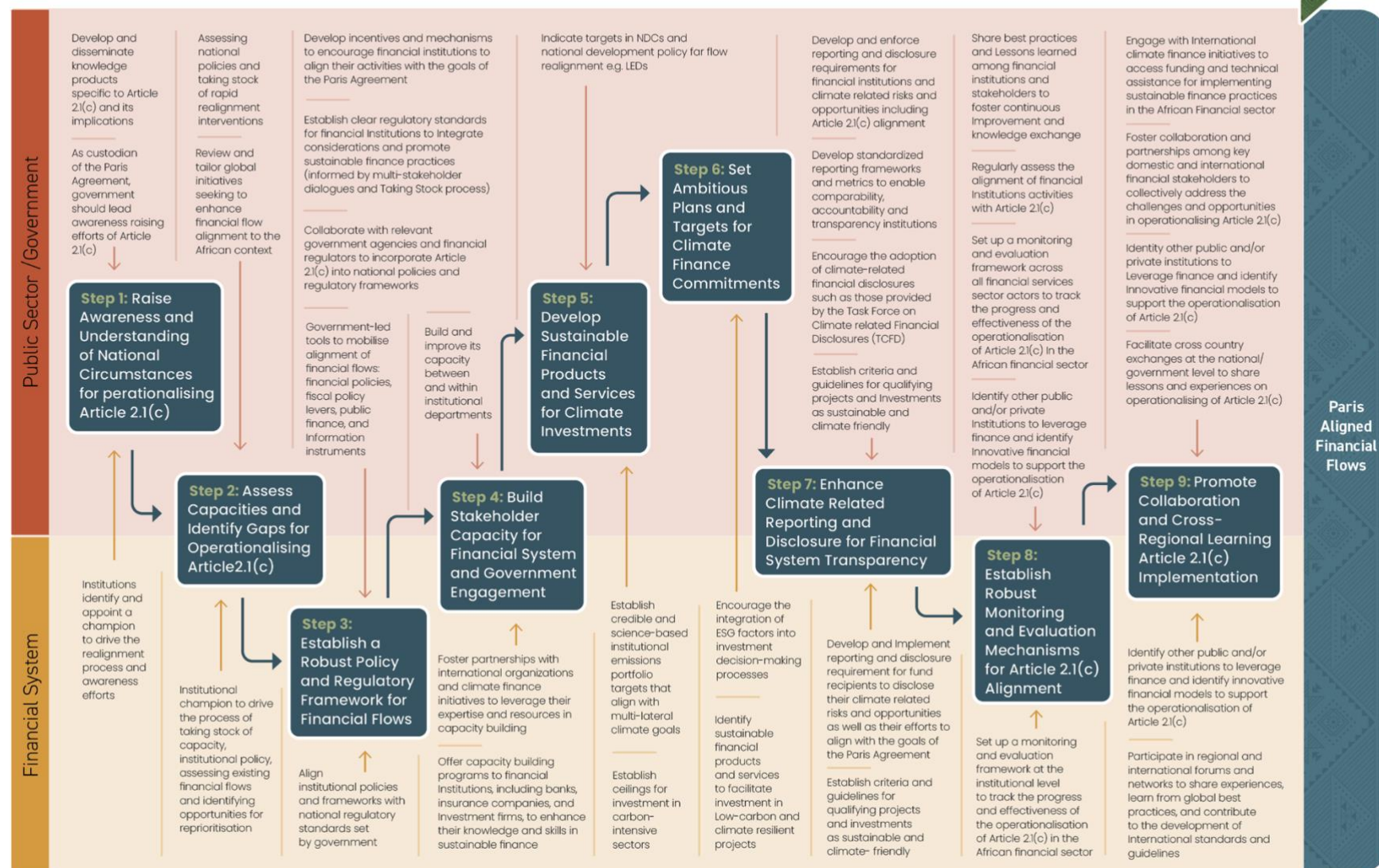


Figure 10: Pathway for operationalisation of Article 2.1(c) in Africa.

Source: Authors own conceptualisation

6.1 Step 1: Raise Awareness and Insight into National Circumstances for Operationalising Article 2.1(c)

6.1.1 Address the Operationalisation Challenges of Article 2.1(c)

Amid the global attention surrounding Article 2.1(c), the operationalisation of this long-term goal still needs to be clarified within multilateral processes, a fact highlighted in both the outcomes of COP27 and COP28. Additional debates continue regarding Article 2.1(c) and its relationship with Article 9 of the Paris Agreement, noted in the outcomes of the Sharm El-Sheikh dialogues.

6.1.2 Recognise National Circumstances and Challenges

Acknowledging the unique challenges encountered by developing countries like South Africa, which include fiscal constraints, high debt levels, and perceptions of investment risk, is paramount. This acknowledgement is particularly crucial for promoting the alignment of financial flows with Article 2.1(c) and ensuring consistency with climate considerations. Recognising the variation in financial sector development across nations, with South Africa possessing an advanced and sophisticated financial sector compared to other African countries, underscores the importance of equity and CBDR-RC in operationalising Article 2.1(c) to ensure fairness and effectiveness. Furthermore, such a pathway must address the challenges and dilemmas developing countries face in their reliance on fossil fuels or high-emission activities for public finance and attracting private capital. By comprehensively understanding these dynamics, the aim is to encourage actions that align with climate considerations and facilitate the transition to low-carbon economies.

6.1.3 Increase Awareness and Encouraging Action

To achieve the desired outcomes, effective dissemination of knowledge and engagement of institutions at various levels are crucial steps. This process includes sharing information regarding the ramifications of fossil fuel reliance and high-emission activities within national economies, elucidating financial institutions' pivotal role in supporting the operationalisation of Article 2.1(c). Recognising the critical role of the financial sector, particularly within the advanced and sophisticated landscape of South Africa, is paramount in facilitating the transition towards a net-zero economy. Understanding the mandate of Article 2.1(c) and its implications for financial flows is essential for engaging stakeholders effectively. Therefore, institutions should undertake internal assessments to gauge their current alignment with climate objectives, accounting for South Africa's specific challenges and commitments, and initiate a realignment process accordingly.

Governments are pivotal in this endeavour, tasked with establishing national priorities within the context of finance and climate change, thus ensuring a cohesive and strategic approach.

6.1.4 Implement a Mainstreamed Integrated Climate Governance Approach

In the realm of the public sector, the UNFCCC focal point, alongside the relevant ministries (such as Finance, National Treasury and other key stakeholders), needs to implement a mainstreamed integrated climate governance approach to realise this step. This approach should consider South Africa's unique challenges and commitments, including its heavy reliance on coal and its Paris Agreement targets.

6.1.5 Engage Representatives from the Private Sector and Industry Association

Engaging representatives from the private sector and industry associations in South Africa is crucial, recognising climate-related risks, the variability in financial sector development across countries, and the need for equity and CBDR-RC in operationalising Article 2.1(c). This engagement is essential for effective action, particularly considering the challenges developing countries like South Africa face, such as fiscal constraints and high debt levels, to ensure an equitable and sustainable transition towards low-carbon economies.

6.2 Step 2: Assess Capacities and Identify Gaps for Operationalising Article 2.1(c)

The lack of a common understanding regarding Article 2.1(c) poses significant challenges in developing a streamlined conceptual framework for its operationalisation. Therefore, to establish a strong and effective framework, taking stock of multiple dimensions, including institutional, policy, technical, and financial resources, is imperative. This assessment should also consider the disparities between developed and developing countries regarding capacities and capabilities.

6.2.1 Establishing a Strong Conceptual Framework:

The lack of a common understanding regarding Article 2.1(c) poses significant challenges in developing a streamlined conceptual framework for its operationalisation. To address this, it's imperative to establish a strong and effective framework by considering multiple dimensions, including institutional, policy, technical, and financial resources. This assessment should also acknowledge the disparities between developed and developing countries in capacities and capabilities.

6.2.2 Comprehensive System-Wide Transformations

Recognising that operationalising Article 2.1(c) requires comprehensive system-wide transformations is crucial. Understanding the complexity of financial systems and the necessity to integrate climate considerations into decision-making processes is essential for developing effective strategies. Given the current limitations in conducting climate risk assessments due to inadequate data, the financial system and government should collectively evaluate existing approaches to align financial flows. This involves identifying gaps in capacities and exploring strategies to address them, paving the way for effective implementation.

6.2.3 Coordination in the Public Sector

Within the public sector, coordination efforts at the national level are crucial for gathering relevant data and information on institutional, policy, technical, and financial resources related to climate action. Ministries responsible for Monitoring, Evaluation, and Implementation should collaborate with other relevant ministries and key stakeholders such as the National Treasury, Finance, Economic Development, and Energy. National climate change commissions or authorities should actively support the assessment of capacities and gaps for operationalising Article 2.1(c), ensuring a coherent approach across different sectors and ministries.

6.2.4 Integration in the Private Sector

From a private sector perspective, financial sector regulators like the SARB, the FSCA, and PA, through its climate think tank, should integrate climate risk assessments into their regulatory frameworks. They should also contribute to identifying gaps and promoting climate-aligned financial practices. Engagement with industry associations can provide valuable insights into the current state of climate-related investments and financial practices within the private sector.

6.3 Step 3: Establish a Robust Policy and Regulatory Framework for Financial Flow Alignment

6.3.1 Establishing Comprehensive Policy and Regulatory Framework

The pathway underscores the necessity of legally enforceable regulatory standards that exceed voluntary initiatives to ensure accountability and commitment. Consequently, the next crucial step involves establishing a comprehensive policy and regulatory framework to align financial flows effectively. This encompasses developing incentives and implementing clear regulatory standards that promote sustainable financial practices. Moreover, governments must take the lead in employing tools to mobilise financial flows towards climate-

aligned investments. In turn, institutions should align their internal policies with the established regulatory standards to ensure consistency and compliance.

6.3.2 Awareness and Short-to-Medium-Term Policy Actions

Decision-makers must know the need for short-to-medium-term policy actions to enable the operationalisation of Article 2.1(c). It is crucial to provide recommendations for addressing financial constraints, regulatory hurdles, and focused policy implementation to support the transition towards low greenhouse gas emissions and climate-resilient development.

6.3.3 Challenges in Establishing Climate Laws and Regulations

Many countries, particularly developing ones, are still in the process of establishing climate laws, policies, and regulations. Consequently, the diffusion of these policies and regulations into the economy and the mainstreaming of climate change in public climate finance at the local, national, and sub-national levels is still being determined. This includes understanding how these frameworks are to be enacted by key stakeholders involved in the financial ecosystem.

6.3.4 Mainstreaming Paris-Aligned Financial Flows

The goal of mainstreaming Paris-aligned financial flows into government policy and financial regulations, policies, and standards is paramount. This should occur through consultation between and within the public and private sectors and financial institutions. Collaboration among relevant ministries and key stakeholders is crucial to develop incentives, clear regulatory standards, and legally enforceable measures promoting sustainable financial practices.

6.3.5 Participation of Financial Sector Regulators and Industry Bodies

Financial sector regulators and industry bodies play a crucial role in policy development within the private sector. They ensure that the regulatory framework aligns with the industry's operational realities, thus promoting effective implementation. Additionally, climate change commissions or authorities should contribute to establishing the policy and regulatory framework to address the challenges posed by climate change and its impacts on financial flows.

6.4 Step 4: Build Stakeholder Capabilities for Financial System and Government Engagement

6.4.1 Recognise the Need for Enhanced Capabilities

To effectively navigate the financial landscape and implement necessary changes, it is crucial to enhance the capabilities of

stakeholders within the financial system and government. This step focuses on improving expertise and resources, fostering collaboration and partnerships, and promoting knowledge sharing among key actors.

6.4.2 Strengthening Authorities' Capabilities

Firstly, authorities must strengthen their capabilities by embracing initiatives that enhance their knowledge and skills. This can be achieved through partnerships with organisations and initiatives with expertise in sustainable finance. By leveraging these partnerships, authorities can tap into additional resources and gain valuable insights to bolster their capabilities.

6.4.3 Promote Collaboration Among Stakeholders:

Furthermore, fostering collaboration and partnerships among various stakeholders is vital. This entails encouraging financial institutions, government bodies, and other relevant actors to work together towards a shared goal. By pooling their expertise and resources, these partnerships can enhance capabilities and drive collective action in aligning financial flows with climate objectives.

6.4.4 Acknowledge High-Carbon Financial Assets

Recognise the significant proportion of high-carbon financial assets, particularly coal, held in countries like South Africa and understand the challenges associated with transitioning financial flows from these assets to low-carbon alternatives.

6.4.5 Facilitate Knowledge Sharing

Additionally, knowledge sharing between financial institutions is crucial. This involves facilitating the exchange of best practices, lessons learnt, and capacity-building strategies among different institutions. By promoting this knowledge sharing, stakeholders can learn from one another and improve their understanding and implementation of sustainable financial practices.

6.4.6 Importance of Stakeholder Capacity Enhancement

Enhancing stakeholder capacity through partnerships, collaboration, and knowledge sharing is essential to effectively navigate the financial landscape and drive the necessary changes towards climate-aligned finance.

6.4.7 Roles of Public and Private Sectors

Within the public sector, UNFCCC focal points and national climate change commissions should take the lead in championing stakeholder capacity-building efforts within the government, collaborating across the relevant ministries and other key stakeholders to ensure that relevant authorities strengthen their capabilities in sustainable finance. From the private sector perspective, financial sector regulators and industry bodies must enhance the capabilities of stakeholders

within the private sector by encouraging and facilitating financial institutions to engage in capacity-building initiatives and fostering collaboration with government bodies and other actors. Private sector industry champions and associations can lead and facilitate knowledge-sharing initiatives as role models for sustainable finance practices and drive collective action within their respective sectors.

6.5 Step 5: Develop Sustainable Financial Products and Services for Climate Investments

6.5.1 Recognise Disparities and Challenges

Acknowledge the significant disparities between developing and developed country markets, particularly in regions like Africa where infrastructure limitations hinder the creation of sustainable financial products and services.

6.5.2 Operationalise Article 2.1(c)

Propose actionable strategies for operationalising Article 2.1(c), including reshaping financial flows, promoting mitigation and decarbonisation measures, and leveraging financial mechanisms across public and private sectors.

6.5.3 Drive Innovation for Climate Objective

Despite these challenges, emphasise the importance of driving innovation in financial offerings that align with climate objectives. This entails exploring and developing innovative financing mechanisms, such as green bonds, climate-focused investment funds, and other ESG-oriented products. By doing so, institutions can provide attractive and accessible options for investors seeking to channel their funds into climate-friendly projects.

6.5.4 Enhance Awareness and Understanding

Highlight the need to enhance awareness and understanding among investors and financial institutions about the benefits and risks of sustainable financial products and services. This includes raising awareness of the long-term value and resilience of low-carbon and climate-resilient investments and providing guidance on integrating ESG considerations into investment decisions.

6.5.5 Roles of Institutions

Stress the key role of institutions in actively pursuing the development of sustainable financial products and services. Institutions must identify and develop such products to support and facilitate the transition to a low-carbon economy and support climate-resilient projects.

6.5.6 Collaboration in the Financial Sector

Advocate for collaboration between financial sector regulators, industry bodies and private sector champions. This collaboration

should focus on exploring and innovating financial offerings that align with climate objectives, particularly in the African Market.

6.5.7 Support from the Public Sector

Emphasise the importance of support from the public sector, including regulators and policymakers. They should create an enabling regulatory environment by providing clear guidelines and incentives to encourage financial institutions to incorporate climate considerations and ESG factors into their decision-making processes.

6.6 Step 6: Set Ambitious Plans and Targets for Climate Finance Commitments

6.6.1 Establishing Comprehensive Plans and Targets

In this step, the pathway emphasises the urgency of decarbonising the economy to meet the 1.5°C temperature threshold and achieve net-zero emissions while considering the economic viability and social implications for countries heavily reliant on fossil fuels. Identify and implement credible targets, plans, investment ceilings, and voting policies that align with climate objectives.

6.6.2 Integrating Targets and ESG Considerations

To effectively drive the transition to a sustainable financial system, it is crucial to integrate these new targets and ESG considerations into decision-making processes, emphasising the decarbonisation imperative. Enhance transparency in ESG reporting, data and target setting, incorporating climate-related targets and ESG factors into evaluating and assessing investment opportunities.

6.6.3 Addressing National-Level Gaps in Climate Finance Commitments

However, it is worth noting that national-level plans and targets regarding climate finance commitments are still being established. Notably, there is a significant gap in African countries' NDCs in explicitly addressing Article 2.1(c). Only Nigeria has mentioned it in their NDCs, indicating the amount of work that still needs to be done at a regional level to mainstream climate finance commitments into country-level climate commitments. To address this gap, regional collaboration and coordination should be fostered to ensure the integration of climate finance commitments into NDCs across African countries. This entails supporting countries in formulating and implementing effective plans and targets and necessary institutional frameworks to drive climate-aligned finance at the regional and national levels.

6.6.4 Fostering Collaboration and Accountability

By establishing these plans and targets, stakeholders can work towards a common vision and create a framework that guides

their actions, ensuring accountability and progress towards sustainable financial practices aligned with climate objectives. Relevant ministries and other key stakeholders should lead in establishing comprehensive plans and targets for climate finance commitments at the national level, working together to identify and implement credible targets, plans, investment ceilings, and voting policies that align with climate objectives, including Article 2.1(c).

6.6.5 Private Sector Engagement and Ambitious Targets

From the private sector perspective, financial sector regulators and industry bodies can set ambitious plans and targets for climate finance commitments within the financial sector, prioritising actions with the decarbonisation and climate-resilience imperative.

6.7 Step 7: Enhance Climate-Related Reporting and Disclosure for Financial System Transparency

6.7.1 Setting the Stage for Reporting and Disclosure Requirements

Following the previous steps, the pathway forward involves developing and implementing robust reporting and disclosure requirements concerning climate-related risks and opportunities, advocating for a principled approach grounded in equity and CBDR-RC. To ensure fairness and the distribution of burdens and benefits, aligning with Article 2.1(c).

6.7.2 Acknowledging Challenges and Tailoring Approaches

Recognising the potential challenges African countries may face due to limited financial market depth, it is crucial to emphasise the need for alignment with countries' levels of CBDR-RC, tailoring approaches to accommodate their unique circumstances and capacity constraints.

6.7.3 Purpose and Benefit of Reporting and Disclosure Requirements

Highlighting the multifaceted benefits of implementing reporting and disclosure requirements, the **first** aim is to enhance transparency and accountability by providing stakeholders with relevant climate-related information and advocating for principled action. Secondly, it provides a foundation for evaluating the alignment of financial activities with climate objectives. By defining criteria for assessing climate-related risks and opportunities, stakeholders can measure and compare their performance, fostering competition and driving progress towards sustainable finance.

6.7.4 Balancing Comprehensive Reporting with Capacity Constraints

Recognising the critical role of comprehensive reporting in achieving climate-aligned finance, it is essential to balance aspirations for comprehensive reporting and disclosure with the capacity and resources available, especially in less developed financial markets.

6.7.5 Enabling Progress Towards Sustainable Finance

Emphasising the transformative potential of effective reporting and disclosure requirements, they can foster responsible investment practices and enhance transparency. It's crucial to stress the importance of considering each country's specific circumstances and capacity while adhering to principled approaches.

6.7.6 Integrated Governance and Private Sector Engagement

Advocating for an integrated climate governance approach, collaboration between relevant government ministries is essential to align reporting criteria with climate objectives and support the transition to sustainable finance, ensuring principles of equity and CBDR-RC are central. Similarly, financial sector regulators and industry bodies should develop and implement robust reporting requirements grounded in principles of equity and CBDR-RC, tailored to African countries' unique circumstances and capacity constraints.

6.8 Step 8: Establish Robust Monitoring and Evaluation Mechanisms for Article 2.1(c) Alignment

6.8.1 Establish Comprehensive Reporting and Disclosure Requirements

In this penultimate step, it is imperative for both the financial system and government to collaborate in establishing robust monitoring and evaluation frameworks. These frameworks serve the purpose of regularly assessing the progress made in operationalising Article 2.1(c). Their primary objectives include fostering improvement, facilitating continuous knowledge exchange among stakeholders, and ensuring accountability across the board.

6.8.2 Role of Monitoring and Evaluation

The process of monitoring and evaluation plays a pivotal role in tracking the alignment of financial flows with climate objectives. By consistently and systematically assessing the implementation of Article 2.1(c), stakeholders can effectively identify areas of success as well as those requiring further improvement and action. This iterative process is crucial for identifying gaps and

challenges, thus enabling necessary adjustments and targeted interventions to be made in a timely manner.

6.8.3 Challenges in Developing Countries

It is essential to acknowledge that monitoring and evaluation efforts may face significant challenges in developing countries, particularly across Africa, where limited access to climate finance data and data infrastructure prevails. Consequently, these countries may require additional support in monitoring and evaluating the alignment of Article 2.1(c) to the same extent as their developed counterparts. Flexibility is key here, allowing for adjustments that account for varying data availability and infrastructure levels while still striving for meaningful monitoring and evaluation processes.

6.8.4 Support Mechanisms for Developing Countries:

Addressing the challenges faced by developing countries necessitates implementing support mechanisms to enhance data collection, accessibility, and analysis capabilities. This includes initiatives such as capacity-building programs, knowledge-sharing platforms, and the provision of technical assistance. Collaboration among international partners, regional organisations, and national stakeholders is essential in effectively implementing, monitoring, and evaluating these frameworks.

6.8.5 Importance of Continuous Monitoring and Evaluation

Regular monitoring and evaluation are indispensable for gauging progress, identifying areas for improvement, and fostering continuous learning and knowledge exchange among stakeholders. This iterative process is essential for driving the operationalisation of Article 2.1(c) and ensuring that financial flows align with climate objectives, even in contexts where data challenges may exist.

6.8.6 Government and Private Sector Collaboration

In the establishment of robust monitoring and evaluation frameworks for Article 2.1(c) alignment, government departments specialising in monitoring and evaluation should take the lead. Collaboration with relevant government departments, including the relevant ministries and other key stakeholders, is crucial to ensure that monitoring and evaluation mechanisms are effectively integrated into the overall climate governance structure. Furthermore, financial sector regulators and industry bodies in the private sector should establish monitoring and evaluation mechanisms within the financial sector. This collaboration should involve close cooperation with government departments to ensure consistency and comparability in monitoring and evaluation practices. Leveraging the expertise of climate change commissions or authorities can further contribute to the effectiveness of these frameworks.

6.9 Step 9: Promote Collaboration and Cross-Regional Learning for Article 2.1(c) Implementation

6.9.1 Emphasising Collaboration and Partnerships

The pathway's conclusion underscores the vital importance of fostering collaboration and partnerships among relevant stakeholders. At this stage, it is imperative to identify institutions and initiatives that can be leveraged to mobilise finance and develop financial models supporting Article 2.1(c) operationalisation.

6.9.2 Facilitating Collaboration

Active engagement with initiatives offering funding opportunities and technical assistance is essential to facilitate collaboration among stakeholders. Institutions can enhance their capacity by accessing these resources and implementing effective strategies for aligning financial flows with climate objectives. Furthermore, participation in regional forums and knowledge-sharing platforms facilitates cross-regional learning, enabling the exchange of best practices and lessons learned.

6.9.3 Political Dynamics and Collaboration

Acknowledging the significant influence of politics in driving collaboration and cross-regional learning is crucial. While governments hold the responsibility of fostering initiatives and creating an enabling environment for effective cooperation, challenges stemming from differing views on Article 2.1(c) implementation and its complementarity with Article 9 have impeded progress in multilateral processes.

6.9.4 Addressing Challenges through Dialogue and Consensus-Building

Proactive efforts are necessary to address these challenges through dialogue, negotiation, and consensus-building among

stakeholders, including governments, civil society, and international institutions. Bridging the gaps in understanding and perspectives is paramount to fostering collaboration and cross-regional learning, ultimately driving progress in operationalising Article 2.1(c).

6.9.5 Role of Collaboration in Transitioning to Climate-Aligned Finance

Collaboration and cross-regional learning are pivotal in creating a collective approach towards climate-aligned finance as the final step of the pathway. Through collaboration, stakeholders can overcome challenges, capitalise on opportunities, and accelerate the transition to a sustainable, low-carbon future by working together, leveraging resources, and sharing knowledge.

6.9.6 Public Sector Facilitation

In the public sector, the UNFCCC focal point plays a crucial role in facilitating dialogue, knowledge exchange, and partnerships among governments, government departments, financial sector regulators, industry bodies, and other financial institutions. This facilitates a shared understanding and commitment to climate objectives.

6.9.7 Private Sector Leadership

Within the private financial sector, institutional champions should take the lead in identifying, appointing, and facilitating initiatives to promote knowledge-sharing and partnership-building. With support from financial sector regulators and industry associations, these institutions can demonstrate the benefits of climate-aligned finance, inspiring others to follow suit.

7 Recommendations

To operationalise Article 2.1(c) of the Paris Agreement and effectively implement this third long-term goal, African countries, policymakers, and financial sector stakeholders should consider implementing the following short-to medium-term integrated actions:

Strengthening Multilateral Cooperation

African governments should engage in sustained multilateral cooperation to ensure that the interests and challenges of developing countries are adequately represented in global climate negotiations. Collaborative efforts should focus on building consensus on the operationalisation of Article 2.1(c) and its complementarity with Article 9, fostering a coherent understanding and coordinated action among all stakeholders.

Enhancing Capacity Building and Technical Assistance

African countries should prioritise capacity-building initiatives, seek technical assistance to address knowledge gaps and develop expertise in aligning financial flows with climate objectives. Collaboration with international organisations, research institutions, and experienced partners can provide valuable insights and support in navigating the complexities of sustainable finance practices.

Promoting Stakeholder Engagement

Governments should foster a multi-stakeholder approach involving financial institutions, private enterprises, civil society, and other relevant actors. Collaborative efforts should be undertaken to identify shared objectives and develop inclusive strategies for climate-aligned finance. Encouraging dialogue and consultations can facilitate the integration of diverse perspectives, ensuring that the pathway is comprehensive and considers the unique circumstances of each country.

Establishing National Green Financing Strategies and Regulatory Frameworks

African countries should develop comprehensive green financing strategies that set ambitious targets and timelines for financial flow alignment. These strategies should outline clear steps, incentives, and regulatory frameworks to encourage investment in low-carbon and climate-resilient projects. Governments should create a favourable environment incentivising private sector involvement in sustainable investments.

Addressing Data and Infrastructure Challenges

Efforts should be made to strengthen climate finance data collection, accessibility, and analysis capabilities in African countries, recognising the data limitations that developing

countries face. International partners should provide technical support and resources to improve data infrastructure, enabling effective monitoring and evaluation of Article 2.1(c) alignment.

Encouraging Innovation and Collaboration in Financial Product Development

Financial institutions, governments, and international partners should collaborate to design innovative financial products and services that support climate-friendly investments tailored to African markets' unique needs and conditions. This may include green bonds, climate-focused investment funds, and other ESG-oriented instruments.

Enhancing Climate-Related Reporting

Governments should establish robust reporting and disclosure requirements concerning climate-related risks and opportunities for financial institutions, promoting transparency and accountability. Tailored approaches should be implemented to account for varying levels of financial market maturity and capacity across African countries.

Mobilising Climate Finance and Investment

Governments should actively seek climate finance opportunities from international funding mechanisms and financial institutions, engaging with global climate finance initiatives and exploring bilateral partnerships to mobilise additional resources for implementing the pathway.

Promoting Regional Collaboration

African countries should enhance collaboration at the regional level to share best practices, pool resources, and jointly address common challenges. Leveraging regional forums and initiatives can facilitate cross-regional learning and foster a collective approach towards climate-aligned finance.

Committing to Long-Term Vision and Action

Successfully operationalising Article 2.1(c) requires long-term commitment and action from governments, financial institutions, and other stakeholders. African countries should establish clear policy frameworks and demonstrate a determination to transition towards sustainable financial practices despite the challenges that may arise.

8 Conclusion

This pathway paper offers a robust framework for African governments to operationalise Article 2.1(c) of the Paris Agreement and align financial flows with low-carbon development objectives. By integrating insights from both analyses, we can craft a comprehensive conclusion that highlights the critical steps needed for sustainable finance practices in the region.

The recommendations emphasise the importance of multilateral cooperation, capacity building, stakeholder engagement, national green financing strategies, data and infrastructure improvements, innovation in financial product development, enhanced climate-related reporting, climate finance and investment mobilisation, regional collaboration, and long-term commitment and action. These measures collectively create a roadmap for African countries to navigate the complexities of aligning financial flows with climate objectives and capitalise on the opportunities presented by the transition to a low-carbon economy.

Implementing these recommendations requires concerted efforts from governments, financial institutions, private enterprises, civil society, and international partners. It necessitates a shared commitment to overcoming challenges, bridging knowledge gaps, and creating an enabling environment that incentivises sustainable investments. By embracing these recommendations and implementing the pathway outlined in this paper, African countries can make significant progress in advancing the shift to low-carbon development, thereby

supporting global climate mitigation efforts and ensuring a sustainable future for their citizens and the planet.

It is imperative for African countries to recognise the urgency of addressing climate change and aligning financial flows with low-carbon development. By unlocking new opportunities for economic growth, job creation, and resilience, they can pave the way for sustainable development. Active engagement in global climate negotiations and collaborative efforts ensures that their unique interests and challenges are adequately represented, further bolstering their contributions to the international discourse on climate finance.

Moreover, the pathway presented in this paper is not only relevant for African countries but also serves as a valuable reference for other developing regions facing similar challenges. By sharing best practices, collaborating on regional initiatives, and learning from each other's experiences, countries can collectively work towards climate-aligned finance and contribute to global efforts in tackling climate change.

In conclusion, operationalising Article 2.1(c) of the Paris Agreement demands a comprehensive and coordinated approach tailored to African countries' specific contexts and needs. By embracing the recommendations outlined in this pathway paper and committing to long-term vision and action, African countries can play a pivotal role in advancing the global transition to a low-carbon economy while simultaneously addressing their developmental priorities and ensuring a sustainable and resilient future for their people.

DISCLAIMER

This paper, titled "Exploring Operational Pathways for Article 2.1(c) of the Paris Agreement in Africa: A Case of High Carbon Financial Assets and Financial Sector Transformation in South Africa," is a product of the Aligning Financial Flows with the Paris Agreement in Africa (AFF) project, implemented by SouthSouthNorth (SSN). The project receives funding from the International Climate Initiative (IKI) of the Federal Ministry for Economic Affairs and Climate Action of Germany (BMWK). The views expressed and information contained in this document do not necessarily reflect those of IKI or BMWK, nor of the entities managing the AFF project. These parties disclaim any responsibility or liability for the views expressed, the completeness or accuracy of the information, or any reliance placed on them.

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