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How does a development model shape energy policy? A case of South Africa's Just Energy Transition and the National Development Plan

Abstract: The objective of this study is to thematically examine how South Africa can achieve its Just Energy Transition plan through a developmental state model. The heart of the argument reclines in assessing the country's capacity to see through a fair and inclusive just energy transition. The capacity of South Africa to discern a just energy transition is prudently located between the type of state model South Africa (liberal and socialist state model) retains and the kind of state model (developmental state) it aspires to be through the National Development Plan. The research seeks to investigate how the two development models can either endorse or impede the country's just energy transition strategies and thus gauge the country's capacity to realize a just energy transition. South Africa has developed a Just Energy Transition plan to rigorously facilitate the country's energy transition from coal to cleaner energy sources. This qualitative desktop study adopts an empirical and thematic research design. The key finding in this research suggests that development models extensively influence how an energy policy can be apprehended. Moreover, the JUST part of the transition is the most prominent factor.

Keywords: Just Energy Transition, developmental state, development model, energy security, National Development Plan

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Introduction

The Just Energy Transition Plan can be recognized as the revised energy transition plan of South Africa and may share many of its sentiments with the 2019 Integrated Resource Plan. South Africa's Presidential Climate Commission (2023) defines the Just Energy Transition (JET) as the primary road map and navigator to guide South Africa's transition from coal to cleaner green energy. As simple as this plan may present itself, due to the complexity and intersectional nature of energy from its generation to its composition, distribution, and consumption, we are inherently exposed to a series of constantly seeking means to ensure energy efficiency and security in numerous levels of procurement (local, provincial, and national). The feasibility of accelerating the JET in South Africa is amplified not only by the global transcript on climate change and net zero ambitions but also by the energy crisis presented by Eskom, the country's power utility, which has been deteriorating for over ten years. These two reasons have granted enough reason to accelerate the JET.

Post 2020, the global dialogue has aggressively gravitated towards net zero emissions ambitions and continues to harness a green, sustainable economy. This impetus can be explained on two fronts: firstly, due to the unmanageable effect of climate change, it remains best to mitigate its impact, and secondly, the acceleration of digitalization has given rise to technologies that can harness a green economy. South Africa is not exempted from this inclination. Instead, South Africa's efforts towards diversifying its energy sources and generation can be traced back to the 2019 Integrated Resource Plan or even the 2012 National Development Plan.

The significance of rigorously investigating the JET before its implementation lies in ensuring efficiency and establishing a good foundation for its proficient implementation. This concern is mainly deduced from evidence of poor policy implementation in the South African case, primarily attributed to government deficiencies (Hoeyi and Makgari 2021). Sihlobo (2021) posits that governments can affect public policy implementation consistently and credibly. However, this is continuously obstructed by limited capacity within the state and its institutions, inadequate policy communication, corruption, conflicting ideologies, and poor governance in local municipalities (Hoeyi and Makgari 2021; Sihlobo 2021).

This is the crux of this study, which seeks to identify all possible hindrances to the effective implementation of the JET. This study, however, centralizes the precepts and importance of how a country's development model can either promote or impede the implementation of the JET. The significant contribution of this research is identified in its relevance and the appreciation of how development models can shape the energy landscape of a country.

It is worth bearing in mind that this study is influenced not only by the country's energy crisis but also on an international level, South Africa's net zero ambitions, and the international dialogue on climate change. With this research, the author aims to uncover crucial precepts for a 'just' JET in South Africa through an empirical and thematic research design tentatively curated to discern functional to numerous readerships and different stakeholders essential to the practicality of energy security in South Africa.

1. Literature review

Energy, a crucial driver of every economy in the world, continues to see a positive trend between technological advancements and the essentiality of energy. Nonetheless, the contemporary energy composition the world has grown to know aggressively demands adherence to sustainable development and net zero ambitions. This pertains to harnessing green energy, which is energy generation that does not harm the environment. South Africa, a primary actor aiming to see net zero ambitions by 2050, has comprehensively developed a plan to assist the country in the transition from thermal power generation. This transition is deemed relevant and significant because it is a solution to the country's energy crisis and a prominent policy that complements sustainable development and the mitigation and management of climate change.

Swilling et al. (2016) maintain that a just transition can be defined along the precepts of structural transformation, resulting in twin dynamics of developmental welfare and sustainable transition. The relevance of contextualizing the concepts of transition and sustainability stems from drawing complimentary elements from these concepts and how they can co-exist in a practical setting. This speaks to how the JET can take place practically yet sustainably. Thus, Swilling et al. (2016) shed light on the importance of considering how sustainability can feature in an energy transition.

Anneck and Wolpe (2021) flag the significance of considering how South Africa's social and protection policies can impact the transition. This viewpoint has been heavily concentrated on the socio-economic state of South Africa since the inception of democracy in 1994. The South African government has prioritized the reduction of high levels of poverty, inequality, and unemployment resulting from the apartheid legacy (Anneck and Wolpe 2021). However, it is widely known that this triple challenge remains a pandemic to the country's development. Thus, Anneck and Wolpe (2021) assert that the JET should ensure a just transition. The word portends equality and protects society's vulnerable groups in this context. Anneck and Wolpe (2021) posit that the impact of the transition can be profoundly judged by whether the transition will leave the vulnerable groups in a better state or far worse than they are currently.

On an equally important note, how a transition is defined has a prominent effect on how it can impact society. An affirmative just transition decrees that the transition should be architected to redistribute economic, environmental, and social burdens within the given socio-economic setting. On the other hand, a transformative just transition seeks to restructure the whole production and ownership system to democratize the dispensing of environmental risks and reintegrate the economy into society (Anneck and Wolpe 2021).

Van Niekerk and Padayachee (2021) argue that upon embracing the just transition, it is essential that we pay attention to the entrenched challenge of the neo-liberal economic model the country has adopted. They argue that this neo-liberal capitalist economy, which is intricately tied to an energy-intensive mining industry, has a contradictory effect on the social setting of the country. Thus, without the radical transformation of this economic system, it is less likely that the transition will be just. Moreover, Van Niekerk and Padayachee (2021) contend that

a transformative, just transition will not only be defined by longevity but will also further entail the political and economic will of the government and business people.

Mirzania et al. (2023) posit that a seamless interaction between techno-economic, socio-political, and socio-technical factors can ensure a just energy transition through the just energy transition. Mirzania et al. (2023) contend that these three factors can gauge the feasibility of the just transition. Mirzania et al. (2023) believe the barriers towards a just energy transition rest on what they term feasibility constraints beyond political hurdles. As much as the plan on paper may be sound, its practicality is essential to ensure it does not remain a document. Thus, the authors advise that before even implementing the energy plan, we must invest sufficient heedfulness to the feasibility of the plan. Mirzania et al. (2023) noted some feasibility constraints known to the energy plan in their assessment. These include techno-economic constraints about the country's heavy economic dependence on coal, the lack of energy infrastructure, and market risks of investing in renewables. The socio-political constraints point to the lack of institutional capacity and support for renewables, corruptive behavior, as well as the lack of transparency and monitoring mechanisms for the Renewable Energy Independent Power, Produces Procurement Programme (REI4P) (Mirzania et al. 2023). Lastly, when looking at the social-technical constraints, there needs to be more skill and manufacturing capability, employment insecurity, a lack of community engagement, and social resistance.

The Just Transition Initiative (2021) suggests that the diversification of the economy and environmental rehabilitation must embrace the build-up towards the just energy transition. This portends the reliance on the coal sector for employment, industrial production, and social spending. Thus, it is advised that broader diversification is critical to the transition as this will prevent significant harm to the coal workforce. This also pertains to the diversification of Eskom; in 2020, the power utility established a Just Energy Transition office to aid in the diversification of the power plant. In its repurposing plan, Eskom intends to utilize existing coal assets to sell renewable energy technologies, hydrogen technologies, and battery storage. The plan also encompasses new ventures, such as converting former power plants to green industrial parks. These initiatives also speak to the rehabilitation of the environment. This speaks to cleaning coal mining and power plants as a profound element towards environmental rehabilitation and a just transition. It is further suggested that coal mine closures need to be handled by mineral authorities and oversight bodies. On that same note, coal mine closures must be made public to increase transparency in the planning process (Just Transition Initiative 2021). The Just Transition Initiative (2021) adds that stakeholder mapping is another significant component of the build-up for a just energy transition.

The essence of this mapping lies in consultation with various societal stakeholders, including underrepresented groups. The engagements should be central to the broader impact of the transition and how it is set to affect each group's energy security and livelihoods. The stakeholders include the government, universities and policy groups, coal extraction and power groups, activists and community groups, and unions. Consultation and engagements with all these groups can ensure a just transition that knows no trade-offs and leaves vulnerable groups without energy security.

On an equally important note, when looking at the nature and founding principle of a developmental state, one that South Africa aims towards through the NDP 2030. A developmental state is a development model in which the state accentuates to balance economic and social development (Ng 2008). Ng (2008) argues that a developmental state further defines the state's significant role in harnessing national resources and informing initiatives through a distinctive policy-making process.

According to Ukwandu (2019), a developmental state is one in which social and economic development are balanced and responsively developed through governmental power and resources. It is distinguished by extensive economic regulation and significant state participation and influence. Chalmers Johnson first used it to characterize Japan's economy, which had undergone rapid modernization and expansion after 1945 (United Nations 2017).

Furthermore, Ukwandu (2019) notes that a government that actively participates in the economy's macro and microeconomic construction to expand the economy and improve its residents' lives is further characterized as a developmental state. Solid political will on the part of the government, a well-established framework for development, and extensive government structures capable of guaranteeing efficient policy implementation are all part of the categorization.

Baker, Newell, and Phillips (2014) contend that much of the research covering just energy transition in and beyond South Africa has always taken a quantitative approach focusing on the techno-economic and technicalities of energy procurement. Therefore, with this qualitative research, the author aims to bring forth a study on the just transition that leans more towards qualitative elements. Such as assessing how a development model can configure the just transition; this approach also gauges the feasibility of the transition given the model of development South Africa follows. With the latter, the author wishes to contribute to the growing literature and scholarship on just energy transition by inserting a study examining how a developmental model can impact a just transition plan.

1.1. Conceptual literature

Development model – A development model is a structured way designed to attain growth broadly used by different field practitioners, such as economists, political scientists, development practitioners, and environmentalists, to name a few. There are several development models, namely, the Western liberal development model, which inserts political development conditions for economic development; liberty and autonomy are essential (Piętak 2014). It advocates for industrialization, modernization, and technological advancements; herein, development is defined by a free-market economy and competitiveness. On the contrary, a welfare model of development strongly advocates for the government's autonomous role in the economy to promote socio-economic welfare. In this model, the government acts as an agency that supports desired social change and development (Aghion and Howitt 1992). While a democratic-socialist model contends towards using democratic means to secure socialist goals, the sustainable model

of development portends to generating present development without compromising future growth and development through unsustainable means that cause harm to the environment (Piętak 2014; Aghion and Howitt 1992).

Just Transition – Wang and Lo (2021) suggest that a just transition is a concept that takes on numerous definitions according to a given setting; the concept gravitates towards five settings, namely a just transition, a labor-orientated concept, as an integrated framework for justice, as a theory of socio-technical transitions, as a governance strategy and lastly a just transition as a public perception. All these definitions hold much relevance in their respective contexts. Nonetheless, these intersecting definitions demonstrate the complexity of energy as a concept and practice. The idea always rests on more than one ordinary meaning. Therefore, one must appreciate all these definitions and their intersectional nature since these differing comprehensions broadly impact the implementation of the just transition. For the United Nations Development Programme (2022), a just transition pertains to what they term a 'climate promise': the greening of the economy in an inclusive and just manner while creating decent living standards in society without trade-offs of leaving anyone behind (UNDP 2022).

1.2. Methodology

This study adopts a qualitative methodology that extensively investigates how a development model can impact the JET within a South African context. The aptness of adopting a qualitative research methodology stem from its ability to enable the in-depth exploration of attitudes, experiences, opinions, and phenomenology. Unlike a quantitative research methodology, a qualitative approach allows for investigating open-ended questions that cannot be expressed numerically (Aspers and Corte 2019). This method provides for analyzing and understanding energy without distorting its intersectionality. Thus, to discern the nexus between energy security and state development models, the attributes of qualitative methodology are deemed suitable.

Moreover, a qualitative method appreciates an empirical and thematic research design. This research further adopts a comparative exploratory research design aimed at investigating a research question that prior studies have yet to extensively study (Stebbins 2011). The feasibility of this research approach is in its ability to examine the nexus between a just energy transition and a development model. The method allows for curating multiple concepts and factors that feed into the diffusion of the just transition and a development model. Through this method, the author can draw on empirical literature and employ a thematic analytic tool to gather findings and literature (Silverman 2013).

Given that limited research on the just energy transition due to the prematurity of the transition itself, this research seeks to explore this crucial angle to the holistic understanding and practice of a just energy transition. This method further enables the comprehensive exploration of the leading research themes and their impact. Through a desktop manner, the data presented

in this research is primarily gathered from journal articles, international institutions, movement departments, energy think tanks, and the Presidential Climate Commission of South Africa.

2. Findings

2.1. South Africa's development model

The empirical data presented in this section assess the development models South Africa has in place and the elucidation of Just Energy. This idea lies in determining how the development model can shape the implementation of the just transition. From the conceptualizations of development models presented in the literature, it can be argued that South Africa's development model is primarily defined by a fusion of a capitalist liberal and a welfare model through a democratic-socialist model. The blend of these models can be illuminated by the legacy of apartheid and the transitional justice measures taken by the African National Congress (ANC) South Africa's ruling party's administration to reduce poverty, inequality, and unemployment post-1994. However, with time, it has become apparent that this blend of models has become exhausted and unsustainable to the growth ambitions of South Africa, particularly in addressing the triple challenge of poverty, unemployment, and inequality.

The implementation of neo-liberal economic theory in a South African setting has consistently been rejected by Narsiah (2002), which has a conflicting effect on the objective of lessening the triple challenge. Given that a nation's economic ideology often shapes its developmental trajectory, the 1996 ideology has, regrettably, led to a retrograde trajectory toward the ANC's 1994 goal. The political and socioeconomic landscape of South Africa has been marked by economic inequality and social unrest as the promises of 1994 appear to be materializing more slowly than expected. According to Van Zyl (2002), the socioeconomic structure of South Africa has always reflected a dualistic economy, which includes a sophisticated monetary system that is more integrated with the global economy, while the peripheral and marginalized economy is primarily found in townships and rural areas, accompanied by slow economic connections and high levels of uncertainty and instability. Due to its dualistic character, the global economy no longer exclusively benefits the formal economy, leaving South Africa's shadow economy beset by unemployment, poverty, and instability (Van Zyl 2002). The latter is ascribed to South Africa's failed neoliberal orthodoxy. Van Zyl (2002) states that the creation of the ideology known as the "Washington Consensus", which is attributed to the United States of America and Western countries, is a shortcoming in and of itself. African economic environments may not always suit and function well for the design. Between 1994 and 2002, South Africa's ideology led to several adverse outcomes, including 53% of the population living below the poverty line, minimal or non-existent infrastructure in rural regions, metropolitan areas accounting for 70%

of the country's economic production, and a shaky market for entrepreneurship. As a result, the metrics above declined in 2014, eighteen years after neoliberalism was implemented, with a 55% poverty rate (World Bank 2020).

This observation is not exempted from the energy distribution and justice of South Africa. The crisis in the national power utility, Eskom, has exposed the imbalances of the looming challenges the ANC has administered to address since 1994. These pertain to energy racism and environmental injustice. Thus, this demonstrates that the unsustainability of these models tends to have a spillover effect on the country's generation, distribution, and supply of energy (Sinwell et al. 2023).

For this reason, South Africa revised its development strategy and model revision, which deemed the developmental state model suitable for the country's development trajectory; this was well documented in the National Development Plan administered in 2012 by the National Planning Commission. The ANC government expressed interest in adopting a developmental state development model on this well-detailed plan. Herein this plan, all areas of development are deliberated, and through this plan, the findings will rule out the energy plan and economic plan under the auspice of the NDP.

The main idea echoed in the NDP and the JET nexus is mainly bound by sustainability. The National Development Plan, with its debut in 2012, aimed to integrate the idea and pattern of sustainability into South Africa's development model. A brief concept of how the NDP understands energy procurement is energy generation, supply, and distribution that harnesses more sustainable economic growth and long-term development. This low-carbon economy is also a panacea to the country's energy challenges. Therefore, the NDP aims to leverage deeper industrialization, energy proficiency, and job creation. The NDP policy towards low-carbon energy generation matched with sustainability should include a balanced import and export supply of coal, while gas can be explored as an alternative. Furthermore, the government should consider an energy mix and greater independence diversity. This pertains to empowering more independent power producers (IPPs) while considering a pricing strategy that accommodates impoverished households and improves municipality energy supply and distribution.

Against the backdrop of this energy transition plan, the NDP defines energy procurement in South Africa as speaking to economic growth and development through adequate investment in energy infrastructure, an energy transition harnessing social equity through expanded access to energy at affordable tariffs, and necessary household subsidies. More importantly, the country's future energy plan should embody the notion of environmental sustainability in efforts to mitigate climate change (NDP 2012).

The Presidential Climate Commission (2022) defines a Just Energy Transition as follows:

A just transition aims to achieve a quality life for all South Africans, in the context of increasing the ability to adapt to the adverse impacts of climate, fostering climate resilience, and reaching net-zero greenhouse gas emissions by 2050, in line with best available science. A just transition contributes to the goals of decent work for all, social inclusion, and the eradication of poverty. A just transition puts people at the center of decision-making, especially those most impacted, people with low incomes, women, people with disabilities, and the youth – empowering

and equipping them for new opportunities of the future. A just transition builds the resilience of the economy and people through affordable, decentralized, diversely owned renewable energy systems; conservation of natural resources; equitable access to water resources; an environment that is not harmful to one's health and well-being; and sustainable, equitable, inclusive land- use for all, especially for the most vulnerable (Presidential Climate Commission 2022: 7)[1].

The main objective of the JET is to achieve net-zero carbon emissions by 2050 and to create more sustainable jobs. The foundation of the transition itself dates back to the tenth national congress of the Congress of South African Trade Unions (COSATU), which flagged the importance of a just transition to 'protect the most vulnerable from the effects of climate change' in 2009. When first conveyed, the idea aimed to ensure that a country sees through a just transition to a low-carbon economy, which can mitigate transition impacts on working-class groups such as communities, workers, and small businesses. The JET treats energy as a right enshrined by the Bill of Rights conveyed in Chapter 2 of the South African Constitution, which emphasizes second-generation socio-economic rights such as shelter, food, healthcare, and social services. Principles of distributive, restorative, and procedural justice further underpin the JET. Distributive justice believes that opportunities and risks that arise from the transition should be distributed fairly, bearing in mind the groupings of race, gender, and class within society. Therefore, it is argued that vulnerable communities do not carry the overall burden of the transition (PCC 2022a).

On the other hand, restorative justice speaks to how previously disadvantaged communities, individuals, and the environment itself must be explicitly addressed and aimed at generating rectifying means to remedy the affected persons; the main idea is to redress before the adoption of a new and different system of energy generation (PCC 2022b). Lastly, procedural justice empowers workers, communities, and small businesses in this transition. These groups should have leverage to define their development and livelihoods concerning the transition.

The Presidential Climate Commission further accentuates that effective governance reclines at the heart of a successful transition with limited trade-offs and inconsistent implementation. The commission argues that effective governance should be accounted for in the national, provincial, and local spheres. The commission portends that articulating a clear, concise, and practical plan requires a coherent relationship among these three spheres of governance. At the national level, the commission advice strong leadership and a clear policy and noting that "The just transition policy imperative (and this framework) should be located within the central planning system of government, specifically in the National Development Plan, the Medium-Term Strategic Framework, Annual Performance Plans, and annual budgeting processes" (PCC 2022c: 20). The above quote aims to capture the interrelation and interdependence between the JET and the NDP; the quote also indicates how the developmental state model can feature in the transition. This highlights how development models tend to shape and configure government policy. The commission also stresses the importance of collaboration between government departments, while each department is commissioned to clearly define its role and mandate about the just transition (PCC 2022b).

[1] The definition of a Just Energy Transition as defined by the Presidential Climate Commission.

The provincial and local spheres of governance are tasked with acknowledging spatially specific climate impact and coordinating the transition in provinces and municipalities. With this critical and grassroots level task, the government recognizes the additional resources and finances needed by the sun-national spheres to implement the task (PCC 2022a). In addition to this task, provinces and local municipalities provide essential infrastructure services and support regional economic diversification by empowering communities and other stakeholders involved in the transition (PCC 2022d).

The Youth Policy Committee (YPC) of the South African Institute of International Affairs in 2022 submitted comments to the Just Transition Framework; the insights were a base cover for a youth perspective (Youth Policy Committee 2022). In the submitted text, the committee highlighted how transition acceleration comes as a mitigation strategy to mitigate the effects of climate change, which are already being experienced globally, including in South Africa and Africa as a continent (YPC 2022). The committee flagged how the tourism and agricultural sectors are most impacted by climate change; on the same note, the committee advises how the acceleration of phasing out thermal power generation can be instrumental simultaneously with the technological innovation of green, cleaner power as well as cleaner modes of transport (YPC 2022). The committee argues that there should be a strict balance between phasing out thermal power generation and downsizing other power plants, which should be on par with the introduction of cleaner, renewable energy generation and technologies (YPC 2022).

2.2. China's Developmental State Transition

On a more comparative scale, developmental states such as China have vast evidence and trail of how developmental state has shaped their energy policy. Lin and Wang (2023) argue that China's Solar+ project was implemented as a PV-based poverty-alleviation in Qinghai Province which exhibited a top-down project implementation; however, it was formidable by local implementation, inconsistent prioritization of consumer needs as compared to addressing local immediate challenges. On the other hand, findings on the Solar+ project in the Inner Mongolia region have indicated the importance of local government support by the national government for the development of ISE-DP, which aids the agricultural, social, and ecological benefits through the generation of clean energy (Lin and Wang 2023). China employed a developmental state approach towards its energy policy to prevent foreign production companies from gaining dominance in the energy market of the country (Lin and Wang 2023). By creating industrial parks established through supportive coalitions and the improvement policy, this approach is called the local eco-developmental state to capture its capacity to harness the national government's green energy transition policies within the regional development sphere.

Hence, China enacted many policies and institutional revised frameworks to accelerate the national transition from coal-based generation to cleaner and renewable options such as solar, wind, and hydropower (NEA 2021). Renewable sources accounted for a significant segment of

the energy produced, which expanded from 15.59% in 2006 to 28.23% in 2020. At the same time, solar PV and wind hiked from 0.14% to 9.5% in the same period. As a result, China's poorest province, Gansu, emerged as the pioneer in green energy transition due to large solar and wind reserves with a solar energy density estimated at 1,750 kWh/m^2 and wind energy density exceeding 500 wind energy (Lin and Wang 2023).

Chen and Lees (2016) posit that the state dominates China's energy market, where the central government takes on a more executive role, mandating sub-national governments to introduce and enact appropriate policies for the local government. Moreover, Chen and Lees note that the energy modes of governance that emerged in China were informed by context and circumstances.

Interviews conducted by Chen and Lees revealed how China has maintained dominance over its energy market firstly:

The central government has official capacity and can take funds from the provinces and then redistribute them to lower levels of government to fulfill tasks allocated by the center. In addition to centrally distributed funds, local governments can also facilitate additional development funding to assist in the implementation of policy (Chen and Lees 2016)[2].

Secondly, the central government tends to have the upper hand in how policy is implemented over the local and provincial government; thus, through a bureaucratic approach, the policy takes a downward approach, from the national to the provincial, then to the regional and community grassroots level of governance and implementation (Chen and Lees 2016).

On the same note, Gallager (2014) points out that there are other ways in which a bureaucratic and top-down approach has been one of the ways they have governed the green transition. To illustrate, the initial stages of photovoltaic equipment manufacturing happened in a much-decentralized manner, where local manufacturing was facilitated by academic personnel and individual technical experts with expertise in modern climate technologies (Chen and Lees 2016). As such, many private and local manufacturers emerged with sufficient government support. Companies such as the Ming Yang, specializing in wind power, and the Chinese Electric Equipment Group, dealing with solar energy, were at the forefront of this initiative; the state-owned enterprise Goldwind remained the dominant powerhouse of this initiative (Chen and Lees 2016).

2.3. USA's Public-Private Partnership Transition

The United Nations of America's energy transition, on the other hand, reflects a more public-private partnership and collaborative efforts from a number of stakeholders, including the federal government and the private sector. The World Economic Forum (2023) argues that America ranks 12 out of 120 states on the Energy Transition Index in 2023, suggesting that the country has made commendable strides toward its net-zero ambitions over the past decade. The progress can be attributed to government policies and private investments. The federal government developed and

[2] Interview findings from Chen and Lees (2016).

mandated renewable energy requirements at the state level, set aggressive goals for lowering GHG emissions, and promoted using renewable energy technologies through grants and tax credits. Additionally, the private sector has invested heavily in the deployment of renewable energy projects as well as in clean energy research and development (World Economic Forum 2023).

The Bipartisan Infrastructure Law (BIL) and the Inflation Reduction Act (IRA) are two prominent initiatives that accelerated the transition. Through significant funding for transmission and grid upgrades $75 billion, enhancing the resilience of the country's physical and natural infrastructure $50 billion, constructing a nationwide infrastructure for electric vehicle charging $7.5 billion, and lowering methane emissions from abandoned oil and gas wells $4.7 billion are all included in the BIL (Ewing et al. 2022). On the other hand, the IRA offers favorable incentives to encourage the energy transition through clean energy tax credits, programs, and pools of finance for commercial and emerging clean technologies, infrastructure, and products. Roughly $369 billion in funding is committed to climate and clean energy provisions (White House 2021; Ewing et al. 2022). The International Energy Agency (2024) points to the cruciality of government proactiveness in establishing a conducive environment for the energy transition to thrive and maintaining investor confidence, which has encouraged investment in the sector.

Furthermore, the government is equally conversant with the trade-offs that may emerge in the transition processes. As such, the government of America prioritizes equality, affordability, and the scaling up of high-quality jobs in the green economy, as encapsulated within the energy transition policy frameworks and structures. Thus, within a market-based development model country such as America, the government still bears prominence in establishing a conducive environment to encourage investment and ensure a smooth transition.

4. Discussion and analysis

The evidence presented speaks to how development models influence and shape an energy policy; the relevance of exploring this angle emerges from the transition South Africa aims to embark on as it transitions from thermal power generation to cleaner and renewable energy sources. From the literature and findings, a development model influences the architecture of all policies within a bureaucracy. The nexus discussed in this paper pertains to the latter but, more importantly, explores how the development models and sustainable just transitions can co-exist and be complementary as development systems in numerous domains of interdependence. More significantly, this discussion finds ground in South Africa's current energy landscape, policy, and transition. The much-harnessed forthcoming Just Energy Transition requires ample research and understanding to ensure its efficiency in terms of policy and its implementations. The priority and investment plowed into its efficiency come to provide sufficient knowledge of the risks and trade-offs associated with the transition. They are considering how the embraced model of development and trajectory South Africa holds has been plagued with the triple challenge

of poverty, unemployment, and inequality challenges, which can re-emerge with the transition provided that the transition begs no consideration for their existence together with their reality.

Nonetheless, much appreciation is credited to the Presidential Climate Commission for recognizing the need for restorative and distributive justice, which speaks to how previously disadvantaged groups must be compensated through principles of equity together with the risks and trade-offs of the transition being fairly distributed in society. The JET further emphasizes the ideals of sustainability; much of its fundamental grounding owes its originality to the notion of sustainability. This pertains to the nexus of using renewable and sustainable sources for energy production. The "just" emphasizes its fair transition and ensures that vulnerable groups of the society are not affected mainly by the transition, so, too, find themselves in a worse situation than before the transition.

These maxims also resurface in the National Development Plan, the blueprint of a developmental state as contexed by South Africa. The NDP puts much emphasis on this principle, especially looking at the energy sector under the blueprint; it equally recognizes the energy realities of the country and how sustainability and the dominance of the national government can feature in the energy landscape of South Africa, the planning commission speaks on how social equity, environmental sustainability, investment in infrastructure and economic development are central to the future landscape of the energy security. Through these two frameworks, we can establish how both emphasis on energy sustainability and social equity go hand in hand with the transition. From the comparative finding, we can establish what deems a developmental state model more suitable for the transition. In China, for instance, it has been evident how the dominant central government control has facilitated and shaped the green transition in the country. This speaks to the bureaucratic fashion of a national energy policy being harnessed by sub-national governments and local municipalities; this dominance goes beyond this top-down fashion through numerous private and regional manufacturers of green energy technologies, which are at the forefront of the transition from a bottom-up approach. However, the central government of China still maintained dominance over the market. The same can be echoed in the case of America, where the federal government was central to facilitating the transition in terms of promulgating policies that enabled the transition and addressed possible trade-offs. However, in terms of financing, the private sector also played a prominent role in the courtesy of transition and investor-friendly policies established by the government. This comparison points out the significant role of the government in the transition, which can enable or derail the transition.

Equally significant, the energy policy in the foreseeable future will shape states' development models through the precepts of green cities, innovative energy technologies, and green energy jobs. Other than this observation, the transition and the yet-to-be-realized developmental state concur with more paradigm shifts likely to introduce significant fundamental changes in the country's energy landscape and development trajectory globally. These paradigm shifts are more likely to influence each other and introduce essential changes in numerous sectors while fundamentally changing daily human conduct and living principles.

However, the discussion does not exempt the challenges known to the NDP and the anticipated JET. The NDP's first ten years of implementation (2012–2022) need to be documented for much

of its progress with little to no evidence of its implementation (Moosa 2021). Thus, it is fair to question whether South Africa will already be a capable developmental state that can shape energy policy soon or even the transition itself. Therefore, provided that South Africa has yet to realize its capable developmental state, the country will likely ensure the efficient just transition as defined in the Just Transition Framework.

Conclusion

This research explored the nexus between a development model and a just transition. From the literature, findings, and discussion shared, it can be established that development models are prone to influence energy policy and green transitions globally. Though the nexus explored herein, this research is premature for analysis since South Africa has not been identified as a developmental state, and the just transition is yet to be implemented, thus limiting the amount of evidence sufficient to infer absolute measurable outcomes. Nonetheless, that does not dismiss the sole significance and relevance of this study. The study assumes that the premature research of the Just Energy Transition remains the backbone and principal reliance in ensuring its efficiency in theory and practice.

Furthermore, the study infers that a development model significantly influences the architecture and implementation of an energy transition; therefore, challenges known to a development model are likely to reincarnate themselves in the new transition. While these two paradigm shifts (developmental state and JET) will significantly influence each other, these changes are bound to have a contemporary effect globally and nationally in many development sectors. Finally, this research recommends that more angles are explored in understanding how the just transition is likely to impact the country in a bird's view eye, and significantly, explore meaningful ways on how the transition can be 'JUST' to every citizen, eliminating and minimizing heightened levels of trade-offs and having an unjust transition that will perpetuate the triple challenge of poverty, unemployment and inequality in South Africa.

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Reference

Aghion, P. and Howitt, P. 1992. A Model of Growth through Creative Destruction. Econometrica 60(2), pp. 323–351, DOI: 10.2307/2951599.

Annecke, W. and Wolpe, P. 2022. What role are social policies in the framework of the just transition in South Africa? *AFD Research Papers*, pp. 1–33. [Online] https://www.cairn-int.info/journal--2022-230-page-1.htm [Accessed: 2024-11-25].

Aspers, P. and Corte, U. 2019. What is Qualitative in Qualitative Research? *Qualitative Sociology* 42, pp. 139–160, DOI: 10.1007/s11133-019-9413-7.

Baker et al. 2014 – Baker, L., Newell, P. and Phillips, J. 2014. The Political Economy of Energy Transitions: The Case of South Africa. *New Political Economy* 19(6), pp. 791–818, DOI: 10.1080/13563467.2013.849674.

Chen, G.C. and Lees, C. 2016. Growing China's renewables sector: a developmental state approach. *New political economy* 21(6), pp. 574–586, DOI: 10.1080/13563467.2016.1183113.

Ewing et al. 2022 – Ewing, J., Ross, M., Pickle, A., Stout, R. and Murray, B. 2022. Pathways to Net-Zero for the US Energy Transition, Nicholas Institute for Energy, Environment & Sustainability, Duke University. [Online] https://www.energy-transitions.org/wp-content/uploads/2022/11/pathways-net-zero-US-energy-transition.pdf [Accessed: 2024-12-08].

Gallager, K.S. 2014. *The Globalization of Clean Energy Technology: Lessons from China*. DOI: 10.7551/mitpress/9805.001.0001, Cambridge, MA: The MIT Press.

Gordon, J.A. 2020. *Mechanisms of Growth in Offshore Wind Power: Feasibility of 2030 Targets in the North Seas Energy Cooperation*. Central European University, MSc Thesis, DOI: 10.13140/RG.2.2.33379.58404.

Hoeyi, P.K. and Makgari, K.R. 2021. The impact and challenges of public policy implementation in the South African Police Service, Northern Cape. *Africa's Public Service Delivery and Performance Review* 9(1), pp. 1–9, DOI: 10.4102/apsdpr.v9i1.374.

International Energy Agency 2024. *IEA policy review highlights the leadership of the United States on energy security and clean energy transitions. International Energy Agency*. [Online] https://www.iea.org/news/iea-policy-review-highlights-leadership-of-united-states-on-energy-security-and-clean-energy-transitions [Accessed: 2024-12-08].

Lin, V.K. and Wang, J.H. 2023. The Green Energy Transition and Peripheral City Development in China: Towards a Local Eco-developmental State. *Development and Change* 54(3), DOI: 10.1111/dech.12765.

Mirzania et al. 2023 – Mirzania, P., Gordon, J. Balta-Ozkan, N., Savan, R.C. and Marais, L. 2023. Barriers to powering past coal: Implications for a just energy transition in South Africa. *Energy Research and Social Science* 101, pp. 1–24, DOI: 10.1016/j.erss.2023.103122.

Moosa, M. 2021. *IJR's Role In Measuring Progress Towards South Africa's National Development Plan.* The Institute for Justice and Reconciliation. [Online] https://www.ijr.org.za/2021/04/01/ijrs-role-in-measuring-progress-towards-south-africas-national-development-plan/ [Accessed: 2023-12-01].

Narsiah, S. 2002. Neoliberalism and the privatization of South Africa. *GeoJournal* 57 (1/2), pp. 29–38.

National Planning Commission 2012. National Development Plan Vision 2030.Government Printer: Pretoria.

NEA 2021a. China's Accumulated Installed Capacity of Renewable Energy Electricity Reaches 1 TW (*Woguo Kezaisheng Nengyuan Fadian Leiji Zhuangji Rongliang Tupo 10Yi Qianwa*). Beijing: National Energy Administration. [Online] www.nea.gov.cn/2021-11 [Accessed: 2023-12-06] (*in China*).

Ng, C. 2008. The 'Developmental State' and Economic Development. *E-International Relations*. [Online] https://www.e-ir.info/2008/06/15/the-developmental-state-and-economic-development/ [Accessed: 2023-12-14].

PCC 2022a – Presidential Climate Commission 2022a. *Community and Stakeholder Engagement on a Just Transition in South Africa*. Johannesburg: PCC.

PCC 2022b – Presidential Climate Commission 2022b. *Chair's Summary from the First Multistakeholder Conference on a Just Transition in South Africa*. Johannesburg: PCC.

PCC 2022c – Presidential Climate Commission 2022c. *Expert Perspectives: Supporting a Just and Climate-Resilient Transition in South Africa*. Johannesburg: PCC.

PCC 2022d – Presidential Climate Commission 2022d. *A Presidential Climate Commission report: A Framework for a Just Transition in South Africa*. Johannesburg: PCC.

Piętak, Ł. 2014. Review of theories and models of economic growth. *Comparative Economic Research* 17(1), pp. 45–60, DOI: 10.2478/cer-2014-0003.

Sihlobo, W. 2021. How can the South African government boost its credibility in the agricultural sector? The Conversation. [Online] https://theconversation.com/how-the-south-african-government-can-boost-its-credibility-in-the-agricultural-sector-166579 [Accessed: 2023-12-19].

Silverman, D. 2013. What counts as qualitative research? Some cautionary comments. *Qualitative Sociology Review* 9(2), pp. 48–55, DOI: 10.31857/S013216250006160-9.

Sinwell et al. 2023 – Sinwell, L., Ngwane, T. and Maggott, T. 2023. From energy racism to people's power: unpacking the electricity crisis and resistance in Orange Farm, Johannesburg. *Review of African Political Economy* 50(176), pp. 197–211, DOI: 10.1080/03056244.2023.2270723.

Stebbins, R.A. 2001. Exploratory research in the social sciences. *Sage Research Methods*, SAGE Publications, Inc. DOI: 10.4135/9781412984249.

Stiglingh-Van Wyk A. 2020. Analyzing the implementation of the National Development Plan (NDP) of South Africa. *Intentional Journal of Social Science and Humanity Studies* 12(2), pp. 352–367.

Swilling et al. 2016 – Swilling, M., Musango, J. and Wakeford, J. 2016. Developmental States and Sustainability Transitions: Prospects of a Just Transition in South Africa. *Journal of Environmental Policy & Planning* 18(5), pp. 650–672, DOI: 10.1080/1523908X.2015.1107716.

The White House 2021. *Fact Sheet: The Bipartisan Infrastructure Deal*. [Online] https://www.whitehouse.gov/briefing-room/statements-releases/2021/11/06/fact-sheet-the-bipartisan-infrastructure-deal [Accessed: 2024-12-08].

Ukwandu, D.C. 2019. South Africa as a developmental state – is it a viable idea? *African Journal of Public Affairs* 11(2), pp. 41–62.

United Nations Development Programme (2022). What is just transition? Moreover, why is it important? UNDP. [Online] https://climatepromise.undp.org/news-and-stories/what-just-transition-and-why-it-important [Accessed: 2023-12-06].

Van Niekerk, R. and Padayachee, V. 2021. The Rise and Fall of a Social Democratic Economic and Social Policy Alternative in the ANC (1990–1996). *Journal of Contemporary African Studies* 39(2), pp. 230–245, DOI: 10.1080/02589001.2020.1864306.

Wang, X. and Lo, K. 2021. Just transition: A conceptual review. *Energy Science and Social Science* 82, pp. 1–11, DOI: 10.1016/j.erss.2021.102291.

World Economic Forum 2023. Fostering Effective Energy Transition 2023 Edition insight report June 2023. World Economic Forum. [Online] https://www.weforum.org/publications/fostering-effective-energy-transition-2023/in-full/united-states/ [Accessed: 2024-12-08].

Xaba, N. 2023. Whose just energy transition? A South African perspective. *WIREs Energy and Environment* 12(5), DOI: 10.1002/wene.478.

YPC 2022 – Youth Policy Committee 2022. Youth Statement on the Presidential Climate Commission's Draft Framework for a Just Transition (2022). South African Institute of International Affairs. [Online] https://saiia.org.za/wp-content/uploads/2022/08/South-African-Youth-Comments-to-the-PCC-Just-Transition-Framework.pdf_.pdf [Accessed: 2023-12-04].

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Jak model rozwoju kształtuje politykę energetyczną? Przypadek sprawiedliwej transformacji energetycznej w RPA i Narodowego Planu Rozwoju

Streszczenie

Celem niniejszego opracowania jest analiza tematyczna tego, w jaki sposób Republika Południowej Afryki może zrealizować swój plan sprawiedliwej transformacji energetycznej poprzez model państwa rozwojowego. Sedno argumentacji opiera się na ocenie zdolności kraju do sprawiedliwej i inkluzywnej transformacji energetycznej. Zdolność RPA do dostrzeżenia sprawiedliwej transformacji energetycznej jest ostrożnie umiejscowiona pomiędzy typem modelu państwa, jaki RPA (liberalny i socjalistyczny model państwa) zachowuje, a rodzajem modelu państwa (państwo rozwojowe), do którego aspiruje poprzez Narodowy Plan Rozwoju. Niniejsze analizy mają na celu zbadanie, w jaki sposób te dwa modele rozwoju mogą wspierać lub utrudniać realizację strategii sprawiedliwej transformacji energetycznej, a tym samym ocenić zdolność kraju do realizacji sprawiedliwej transformacji energetycznej. Republika Południowej Afryki opracowała plan sprawiedliwej transformacji energetycznej, aby rygorystycznie ułatwić przejście kraju z węgla na czystsze źródła energii. To jakościowe badanie stacjonarne przyjmuje empiryczny i tematyczny projekt badawczy. Kluczowe odkrycie w tym badaniu sugeruje, że modele rozwoju mają duży wpływ na to, jak można postrzegać politykę energetyczną. Co więcej, część transformacji JUST jest jednym z najważniejszych elementów.

Słowa kluczowe: sprawiedliwa transformacja energetyczna, stan rozwoju, model rozwoju, bezpieczeństwo energetyczne, Narodowy Plan Rozwoju