Electricity Access Expansion and the State-Society Relations in Mozambique

By

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LIST OF ACRONYMS AND ABBREVIATIONS

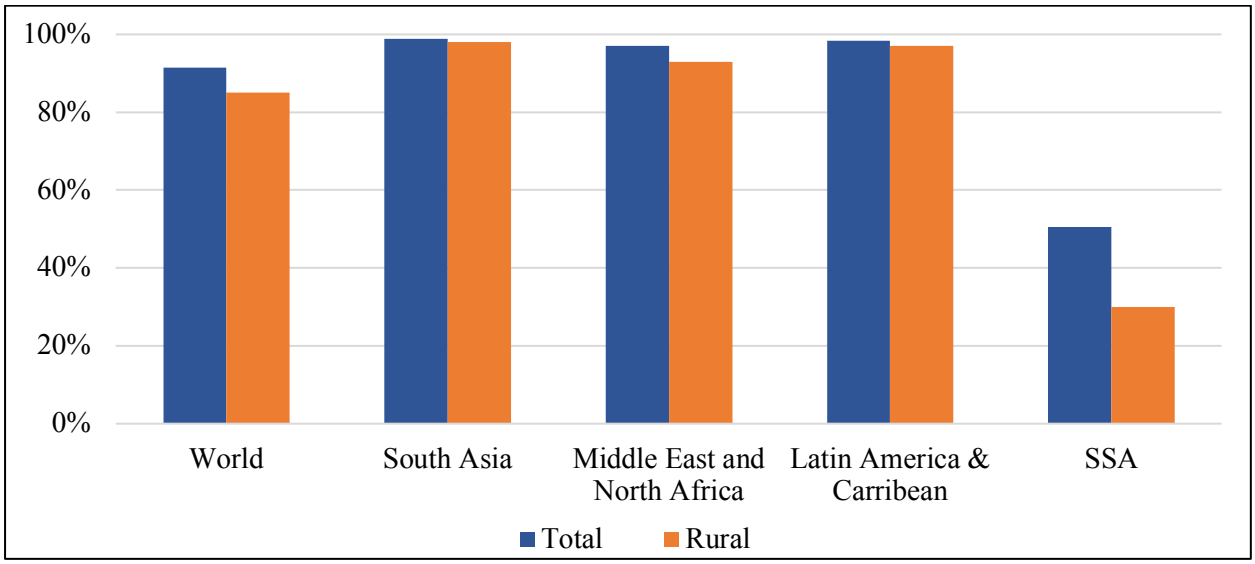
ANC	African National Congress
ARENE	Energy Regulation Authority (*Autoridade Reguladora de Energia*)
CAR	Central African Republic
CIP	Public Integrity Center (*Centro de Integridade Pública*)
CSO	Civil Society Organizations
DRC	Democratic Republic of Congo
EDM	Electricity of Mozambique (*Electricidade de Moçambique*)
FMO	Budget Monitory Forum (*Forum de Monitoria do Orçamento*)
FRELIMO	Mozambique Liberation Front (*Frente de Libertação de Moçambique*)
FUNAE	National Energy Fund (*Fundo Nacional de Energia*)
GDP	Gross Domestic Product
GSM	Global System for Mobile
GW	Gigawatt
GW/h	Gigawatt/hour
HCB	Hydroelectric Cahora Bassa (*Hidroeléctrica de Cahora Bassa*)
IEA	International Energy Agency
IESE	Institute for Social and Economic Studies (*Instituto para Estudos Sociais Económicos*)
IIBRD	International Bank for Reconstruction and Development
IMD	Institute for Multiparty Democracy
INE	National Statistics Institute (*Instituto Nacional de Estatísticas*)
IEC	International Electrotechnical Comission

kW/h	Kilowatt/hour
LAM	Mozambique Airlines (*Linhas Aéreas de Moçambique*)
LED	Light-emitting diode
MIREME	Ministry of Mineral Resources and Energy (*Ministério de Recursos Minerais e Energia*)
MOTRACO	Mozambique Transmission Company
MW	Megawatt
NGO	Non-governmental Organizations
NPO	Non-Profit Organizations
PAYG	Pay-As-You-Go
PPA	Power Purchasing Agreements
RENAMO	Mozambique National Resistance (*Resistência Nacional de Moçambicana*)
SDG	Sustainable Development Goal
SHS	Solar Home Systems
SOE	State-owned Enterprises
Solar PV	Solar Photovoltaic
SSA	Saharan African
TMcel	Mozambique Telecom
USA	United States of America
USD	United Sates Dollar
VAT	Value-Added-Tax

CHAPTER 1 – Introduction

Access to electricity remains crucial to the socioeconomic development of any nation. However, about 675 million people worldwide lack access to electricity, and nearly 2.3 billion people rely on polluting fuels for cooking and illumination (World Bank, 2023c). Most people without access to electricity are in developing countries, especially in the sub-Saharan African (SSA) region, where energy poverty is most pronounced, particularly in rural areas. Figure 1 compares electricity access between total and rural percentages across the developing regions in 2021 and shows that the SSA has about half of the total access rates in other regions, and about three times less in rural electrification.

Figure 1 Electricity Access as Percentage of Population in Developing Regions (2021)



Source: Author, based on IEA (2023b), World Bank (2023a)

The persisting energy poverty in the developing world has provoked many debates and attempts to comprehend and solve the issue. Various countries have been implementing reforms –

from grid extension to the maximization of decentralized solutions like Solar Home Systems (SHS) – to tackle the problem. Concerning academic debates, various attempts to explain the issue have – notably from economic, socioeconomic, institutional, and political perspectives – developed; however, separately, they are far from offering a complete framework to understand the complex problem entirely.

1.1 Research Aim

This dissertation joins the debate on the low and irregular distribution of electricity access many developing countries face to contribute a necessary alternative explanation. It does so by expanding the political perspective and discussing elements of interactions between state and society, to which the previous research does not pay much attention. This dissertation addresses the role of the elite's political control, the society's stance toward low and irregular electricity access, and, ultimately, the state's role in developing decentralized solutions for electricity access, particularly the SHS.

1.2 Research Questions and Arguments

1.2.1 Research Questions

The electricity situation in Mozambique, a low-income southern African country, is suitable for demonstrating how the extant perspectives are insufficient to explain why the electricity access rates in many developing countries remain significantly low. The country is immensely endowed with natural energy resources, has benefited from financial, institutional, and technological support from donors and development agencies, and has adopted several policy instruments intended to decentralize the sector and technological solutions to expand electricity access; yet, the electricity

access rate remains relatively low – around 40 percent, and the gap between urban and rural areas significantly high (World Bank, 2023a;World Bank, 2023b).

This dissertation takes the case of Mozambique to address the issue of the persisting energy poverty through the following questions:

(I) What explains the persistent low levels of electricity access in Mozambique?

(II) Why has the SHS segment not received much governmental attention in Mozambique?

1.2.2 Research Arguments

This dissertation argues that the elite's political control of electricity access distribution favors wealth accumulation and political advantage to some ruling elites who constrain the state's ability to distribute electricity access effectively and to support the adoption of decentralized solutions for electricity access – like SHS. Meanwhile, the society, although perceiving the state as responsible for the distribution of the service, has not addressed grievances through politics of pressure – like public protests, and relied on locally available low-cost solutions, particularly SHS products – to ensure access to electricity.

The political organization in Mozambique is markedly patrimonialistic – meaning that the exercise of authority is, to a significant degree, based on the interests of the ruling elites, who systematically exercise significant political control over the society since the country's independence in 1975. These individuals and groups use the state's resources to secure the loyalty of individuals and groups in the general society to generate economic benefits and remain in power through electoral victories. This has been disrupting the state's ability to implement effective policy measures to, for example, allow a wider adoption and popularization of decentralized solutions like SHS. Meanwhile, on the societal side, although the state is perceived as responsible for distributing

public goods – including electricity access, there seems not to be an expectation that the state will solve the issue in the short to mid-term. Neither the residents (urban nor rural) seem willing to engage in collective initiatives to demand better service allocation – e.g., through protest. Instead, off-grid residents – especially in rural areas, have relied on local solutions to electricity access, including low-cost and low-quality SHS products distributed through informal markets.

Considering the low levels of political and civic participation associated, to a significant degree, with the repression of various forms of open participation in society and the lack of resources (e.g., financial resources for infrastructural development), the ruling elites, in their cost-benefit calculations, may not be compelled to effectively address the people's energy needs, especially throughout rural, isolated areas, where the situation of political and civic participation is more critical.

This dissertation offers an alternative explanation for the persisting energy poverty many developing countries face, which the extant perspectives cannot fully explain. It stems from a theoretical ground and seeks to confirm the arguments by using primary qualitative data and secondary data. In short, the scrutiny of the arguments was done in two ways:

I. For the assumption that amid the elite's political control and its influence in electricity distribution, and society's "unwillingness" to engage in collective actions like protests and opt to adhere to locally available solutions like SHS – patterns across primary data collected through 395 interviews with rural and urban residents distributed across all 11 provinces of Mozambique were checked against secondary data and theory to for conclusions. The interviews gathered perceptions and sentiments concerning the state's performance in distributing electricity services and the interactions between the citizens (rural and urban

residents) and state energy agencies. Full details of the methodology are described in Chapter 4.

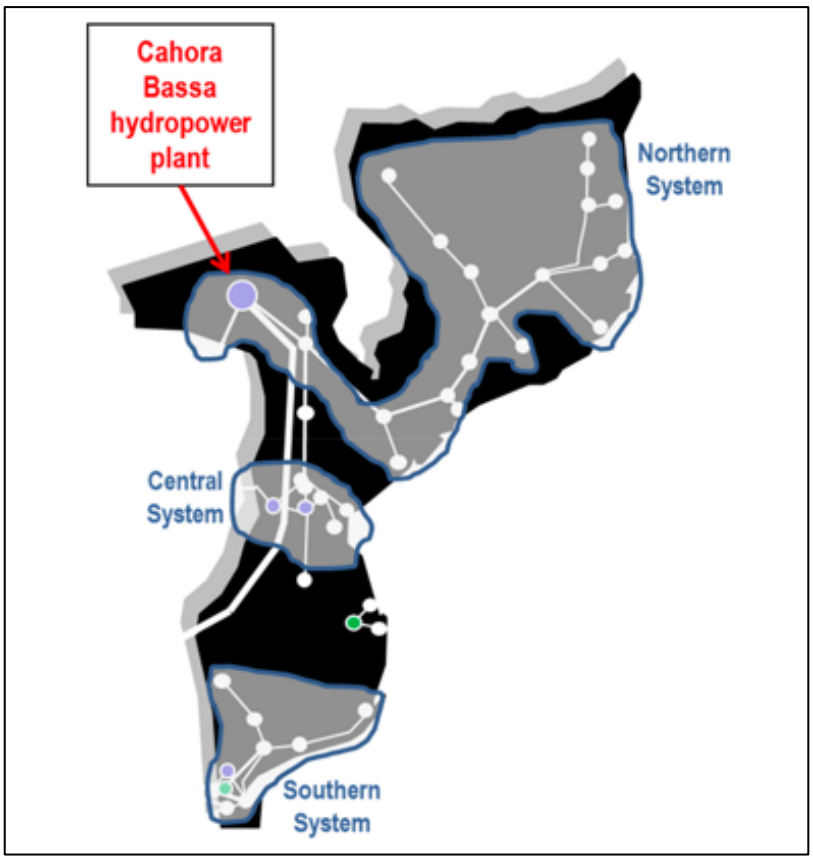
II. For the assumption that the elite's political control has a role in the distribution of electricity, particularly the state's reluctance to implement fiscal incentives to promote the expansion of SHS, patterns across testimonies from 30 interviews with 30 key informants of the sector – including state energy agencies, scholars, private companies, consultants, and development agencies – were checked against secondary data and theory to for conclusions. The interviews gathered perceptions of the role of the elite's political control on the state's stance towards the developments in the SHS segment in Mozambique. While this strategy cannot capture the entire spectrum of perception in Mozambique, it helped unveil unique details from stakeholders that work closely, daily, with the state. Full details on data analysis and collection in Chapter 4.

1.2.3 Competing Arguments

This dissertation recognizes the potential of two competing arguments in explaining (i) the low and irregular distribution of electricity in Mozambique and (ii) the lack of state support for the expansion of SHS through the deployment of incentives, particularly fiscal incentive on the importation of SHS, but explain their limitations in addressing the issue to refute them. The first argument speaks of the colonial legacy and the role of the 16 years (1996-1992) of the post-independence civil conflict opposing the Mozambican government and the then guerilla Mozambique National Resistance (in Portuguese *Resistencia Nacional de Moçambique* – RENAMO). On the one hand, there is a perception that the low levels of electricity access in the country result from the incomplete and fragmented electricity system (Kirshner et al., 2020; Salite,

Cotton, et al., 2020) illustrated in Figure 2, which was inherited from the Portuguese colonial government.

Figure 2 Electricity System in Mozambique



Source: EnergyPedia (2023)

On the other hand, there is a claim that the civil war has impeded the completion of the fragmented electricity system and remains a significant factor in today's poor outcome in electricity access distribution (Kirshner et al., 2020; Cotton et al., 2019; Salite et al., 2020). As Kirshner et al. (2020) pointed out, FRELIMO's ability to manage the territory was first challenged by RENAMO's guerrilla movement, which emerged as a contestation to the state's authoritarian rule. Subsequently, RENAMO developed the ability to control some of the country's regions effectively, making it

more challenging for the state to expand basic social infrastructures. The problem with both arguments is that they lack consistency and ignore the developments in post-independency and the fact that the state has managed little progress during about 30 years of relative political stability.

The fact that the state has managed little progress during relatively stable political periods makes the argument weak and hard to justify. For example, both claims ignore the public utility company's inability to update, upgrade, and expand the grid due to its difficult financial situation, caused, to a great extent, by excessive subsidies and losses from unpaid bills that totaled over USD100 million in 2022 (Club of Mozambique, 2022). Salite et al. (2020) addressed the core political problem of Mozambique's state electricity utility company (in Portuguese *Electricidade de Moçambique* – EDM). Among other issues, (i) the consumer tariff system is politicized and used as an electoral campaign tool, (ii) some elite's political interests somehow capture the company, and (iii) EDM's dominance of the industry means less competition.

The second argument concerns the adoption of SHS. The claim comes mainly from some preeminent state officials in the energy sector – whose testimonies are extensively discussed in Chapter 6 – and refer to the SHS as a non-sustainable solution for electrification and allocation incentives is more likely to benefit the private companies and not the expansion of SHS and its end users – the low-income households. They also claim that deploying fiscal incentives to SHS would cause a significant loss in tax revenue and that the private sector should invest more capital instead of relying on fiscal incentives and subsidies. The problem with this argument can be seen in two hands. First, there is a contending stance within the state energy agencies that see the lack of incentive as a mere political decision that has nothing to do with the technical opinion in the sector. Second, the argument of tax revenue loss, although logical, contradicts what the government is doing in terms of incentives in the energy sector – e.g., the Government is subsidizing new

connections to the national grid by the state utility EDM, which equally means financial burden to EDM and the Government.

Ultimately, the lack of incentives to SHS can, to a significant degree, be viewed as politically motivated, meaning that it may benefit particular economic and political interests of individuals and groups within the ruling elite's circle. This assertion is consistent with the stance among the bureaucrats of the sector who tend to see the issue as merely political, as the technical opinion has been made clear that incentive to solutions like SHS is necessary and the only way through which the country can keep the dream universal access to electricity alive.

1.3 Problem Statement

The persisting energy poverty in the developing world – particularly in the SSA region – has fueled many debates and multiple explanatory perspectives. In recent discussions on the reasons behind the persisting energy poverty in developing countries, especially in SSA countries, many academic works have highlighted the role of economic, socioeconomic, institutional, and political factors – hereinafter referred to as "extant perspectives" – to explain the low and irregular electricity access rates and barriers to grid extension and adoption of off-grid decentralized solutions like SHS. The merits and limitations of the extant perspective are only summarized in the present section and elaborated in Chapter 2.

The economic perspective helps understand the challenges states in developing countries face in materializing the costly investments in expanding electricity access while emphasizing the roles of the country's dependence on fuels, economic shocks, and the economic viability of alternative solutions for electrification – such as SHS – to explain the low electricity access in many developing countries. The socioeconomic perspective emphasizes differences in income

levels and demographic structures to explain the low levels of electricity access, including low adoption and expansion of decentralized solutions like SHS. The institutional perspective helps understand the influence of institutional quality, government interests, the role of the private sector, and incentive arrangements in the poor outcomes in expanding on-grid solutions and the adoption and expansion of decentralized off-grid solutions like SHS. From the political perspective, much emphasis is given to the roles of different political systems and the country's political stability to the outcomes of expanding electricity access. In this perspective, generally, democratic regimes are seen as more open to satisfying citizens' demands for the effective allocation of public goods, like electricity services.

The perspectives mentioned above are strong in some respects and weak in others. This dissertation contends that understanding the various outcomes concerning electricity access in many developing countries will require a holistic approach that would consider all these perspectives to build a comprehensive framework to capture the variations in performances concerning the countries' efforts in materializing the goal of effective distribution of electricity access.

In general, the extant perspectives miss some puzzles: the economic perspective cannot explain why some developing countries with struggling economies managed relative success in expanding electricity systems and why some others with decent economic performance struggle to do so; the socioeconomic perspective fails to address the variations concerning income levels: why some countries with significant levels of inequality performed relatively better than some other with less inequalities in expanding electricity access. The institutional perspective seems insufficient to justify why institutional quality (e.g., government effectiveness) is consistent with some levels of electricity access and not with others: some governments considered ineffective

performed better outcomes than others considered to be relatively stable in electricity access. While the political perspective emphasizes country stability and variations in political regimes, these factors are insufficient to explain the various outcomes of electricity distribution across countries with different political regimes.

This dissertation contends from a political perspective focusing on state-society relationships, particularly the roles of the elite's political control and its influence in electricity distribution and the citizen's stance on the outcomes of electricity access distribution. Both aspects deserve more attention when trying to understand the complexities of factors behind persistent energy poverty in the developing world (particularly in the SSA region) because they add relevant accounts of how different interest groups in society try to influence the policymaking process and how these attempts result in different outcomes in the distribution of public goods, including access to electricity.

1.4 Limitations of the Study

Some limitations encountered throughout the research process are listed below. They include limitations in drawing arguments, data collection, and external validity.

(I) One of the significant weaknesses in arguing about the elite's political control and politicization is that these phenomena involve hidden mechanisms involving transactions that are hard to unveil. Also, they discuss elements such as clientelism, rent-seeking, corruption, and conflict of interest, which many potential interviewees showed discomfort in addressing. Also, the literature addressing aspects of the elite's political control and politicization of electricity distribution has not been entirely developed. However, the difficulties had a relatively small influence on the final results of the research.

(II) It is essential to underline that the elements of rent-seeking and clientelism are not thoroughly tested in this research. Testing them thoroughly would require further and a more detailed empirical work. Instead, the intention in discussing these elements is to show that these elements are part of the complex mechanisms of the elite's political control over the electricity access distribution and may have a role in the irregular and low electricity access distribution, as well as in the state's skeptical stance toward implementing fiscal incentives the SHS segment.

(III) The research encountered difficulties during the primary data collection. The first round of fieldwork was conducted between September and November of 2021 – during the Covid-19 pandemic. The problem was mitigated by conducting interviews in both face-to-face and online formats. During the second round of fieldwork (December 2022 – February 2023), the study encountered difficulties traveling to multiple provinces. This problem was solved by partially using third-party services to complete the interviews.

1.5 Significance of the Study

This research conveys both theoretical and practical contributions. On the theoretical hand, it contributes to the debate on the factors of the persisting energy poverty and unequal distribution of electricity access and the state's role in the developing world, particularly in sub-Saharan Africa (SSA). By demonstrating the shortcomings of the economic, socioeconomic, institutional, and political extant perspectives in addressing the issue of persistent energy poverty many developing countries face, this research suggests a new route of analysis that expands the political perspective by looking at the interactions between state and society, the various interests involved, and how they can influence the process of distribution of electricity access. Precisely, it unveiled additional

conditions and mechanisms that help explain why some developing countries struggle to expand access to electricity.

On the practical hand, the research attempts to contribute empirically to the debate on the persisting energy poverty in many developing countries by expanding the political perspective and introducing new empirical data on society's role in the poor outcomes of electricity access and the perception of the role of politicization in the ineffective expansion of electricity access.

1.6 Dissertation Outline

Chapter 1 introduced the research aim, questions and arguments, research problem, study limitations, and significance. The next chapter, Chapter 2, submits the analytical framework and literature review while framing the dissertation's argument. First, it describes the merits and shortcomings of the extant perspectives. Second, it demonstrates the pertinence of expanding the political perspective to explain the persistent energy poverty many developing countries face.

Chapter 3 presents the relevant background information. First, it contextualizes the general situation of electricity distribution in the development world, including the trends in electricity developments, the popularization of off-grid solutions like SHS, and the political aspects of electricity access distribution. Second, it contextualizes the electricity distribution in Mozambique by describing the political context of the post-colonial state building, the nature of the state-society relations, and the description of the electricity system, including electricity potential, generation, and access distribution.

Chapter 4 discusses the dissertation's methodology. While Subsection 1.2.1 briefly describes the arguments' validation strategies, full details of data collection and analysis strategies are discussed in Chapter 4. The chapter portrays methodology in two formats, each applied to one

of the two research questions. The first format is applied to research question 1 – "What explains the persistent low levels of electricity access in Mozambique?" – and the second to research question 2 – "Why the SHS segment has not received much governmental attention in Mozambique?"

Chapters 5 and 6 comprise the analytical units of this dissertation . Chapter 5 presents and analyzes the results corresponding to question 1, which essentially discusses the roles of the elite's and society's roles in the current state of electricity distribution in Mozambique. Chapter 6 presents and analyzes the results from research question 2. Chapter 6 presents and analyzes the results corresponding to question 2. It narrows the discussion on elites and the distribution of electricity to assess the role of elites in the state's skeptical stance towards promoting SHS distribution in Mozambique. Finally, Chapter 7 summarizes the main discussions throughout of the dissertation, state the main conclusions, and, briefly, reiterate the dissertation's contributions and possibilities for future research development.

CHAPTER 2 – Analytical Framework and Literature Review

This chapter presents the analytical framework of the research while discussing the reasons for expanding the political perspective to understand the factors behind the low and irregular electricity access distribution in the developing world. It discusses the merits and shortcomings of the extant explanations. It suggests a new explanatory route based on a framework based on the elite's political control and society's stance concerning the ineffective distribution of electricity access.

2.1 Analytical Framework

As stated earlier, the persistent energy poverty in the developing world has fueled academic debates leading to various explanatory perspectives – notably economic, socioeconomic, institutional, and political – in explaining the low electricity access rates in the developing world, particularly in SAA countries. This section discusses the extant perspectives' main fixtures, merits, and weaknesses. The following subsections detail the merits and limitations of the extant economic, socioeconomic, institutional, and political explanations in addressing the persisting energy poverty.

2.1.1 Economic Perspective

The literature addressing economic factors emphasizes the role of economic development levels, lack of financial resources, fuel dependency, economic shocks, and economic viability in the distribution of electricity access. The lack of financial resources constrains the investment in the necessary infrastructure for effective electricity distribution. According to Scott and Seth (2013:7), most developing countries failed to expand the grid to rural areas because of its high investment costs.

Economic shocks affect a country's ability to expand electricity access. Fluctuation of fuel prices in the international market impacts the planning and execution of energy projects; therefore, conditioning the expansion of electricity access (Agyekum, 2020). The COVID-19 pandemic and the Russia-Ukraine war are excellent examples of external shocks that disrupted countries' energy well-being. As many countries rely on the importation of fuels for energy consumption, such shocks may constrain the existing electricity distribution and prevent the development of new ones (Streimikiene & Kyriakopoulos, 2023).

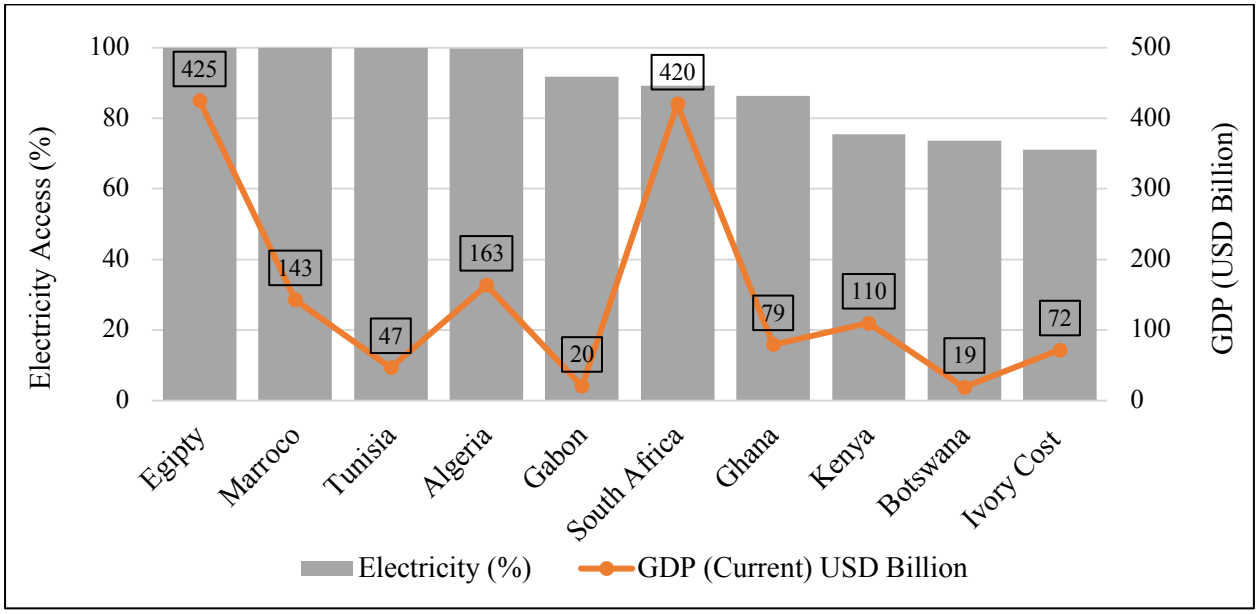
Economic viability is seen as a critical aspect when considering adhering to decentralized solutions like SHS as a practical alternative to grid extension where energy poverty is significant (Mah et al., 2018; Makki & Mosly, 2020; Sarker et al., 2020; Scott-George et al., 2021; Shakeel et al., 2023; Halder & Parvez, 2015). Sarker et al. (2020:12-13) stated that the initial investment costs, maintenance, and complex after-sell services are significant issues in adopting SHS. The technological cost, particularly the high cost of the installations of solar energy-based technologies – which exceeds the costs of available alternative solutions – affects the perception of such technologies (Mah et al., 2018; Makki & Mosly, 2020). Lack of credit and financing mechanisms also prevent adherence to the technology, mainly among low-income households (Shakeel et al., 2023:6). This, coupled with the initial costs attached to these technologies and the burden associated with the payback period, adds more challenges to the marketing of such solutions (Scott-George et al., 2021; Mah et al., 2018; Halder & Parvez, 2015:401).

Despite the merits stated above, the economic perspective has limitations in explaining the energy poverty in most developing countries. It seems insufficient to explain why – despite the availability of significant financial support from international mechanisms, including schemes aiming at improving energy development, mainly from development finance institutions, the

largest clean energy investors in Africa (IEA, 2023a; Laakso & Petric, 2022; IEA, 2023b) – the SSA region managed little progress in expanding electricity access.

Comparing electricity access rates with Gross Domestic Product (GDP) levels gives relevant insights into various outcomes that the economic perspective alone cannot explain. Taking SSA as a reference, Figure 3 shows various combinations that demonstrate inconsistency between electricity access and GDP levels across Africa's top 10 most electrified countries in 2021. For example, South Africa, a top 3 in GDP, was number 6 in electricity access. Intriguingly, Nigeria, the country with the largest GDP (USD 444.83 billion) in the continent, had an access rate of 59.5% and was not among the top 10 most electrified countries.

Figure 3 GDP of Top 10 Most Electrified African Countries (2021)

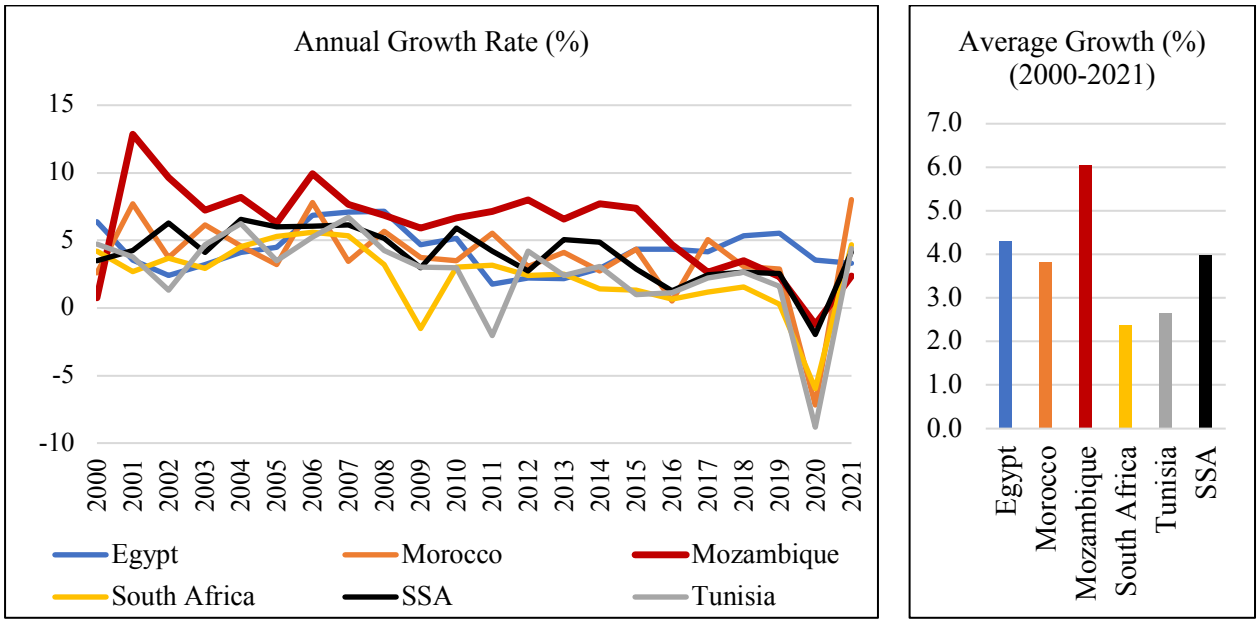


Source: Author based on World Bank (2023c),World Bank (2023b)

Taking Mozambique as a reference, as illustrated in Figure 4, the country had a stable GDP growth during the last two decades – averaging 6.1 percent per year – better than the sub-Saharan

average (4 percent) and the three most electrified countries in Africa and South Africa; however, the electricity access rates remain significantly below compared to these countries, as shown in Figure 4. These contradictions suggest that the changes in electricity access rates do not necessarily follow the changes in both the size of GDP and GDP growth rate.

Figure 4 GDP Growth of Selected African Countries and SSA Region

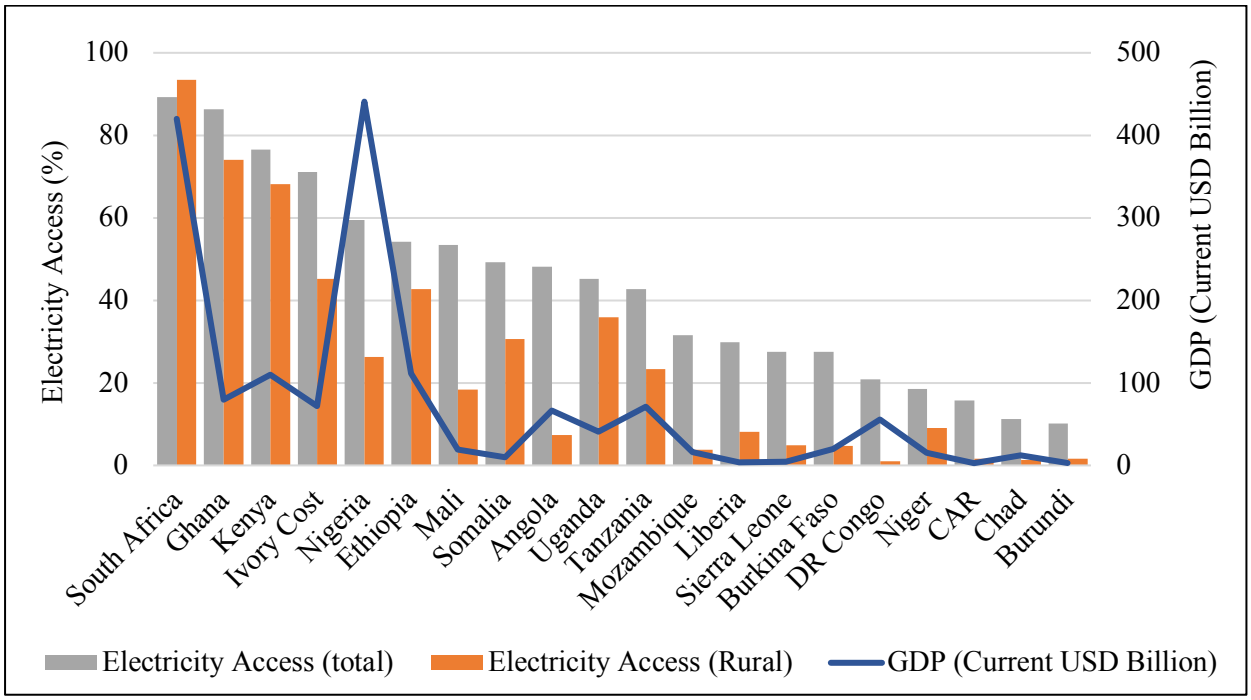


Source: Author, based on World Bank (2023c)

A comparison between the top 10 largest and the top 10 smallest economies in the SSA region unveils patterns that corroborate the notion that the economic perspective cannot entirely explain the reason for the persistent energy poverty in many developing countries, particularly in the SSA region. Figure 5 shows a relative consistency when looking at the performances of the top 10 smallest economies like the Central African Republic (CAR) and Chad, with electricity access rates of 10.2 percent and 11.3 percent in 2021, respectively; however, there are also countries with

larger economies that remain far from universal access. Nigeria, for example, the largest African economy in 2021, recorded 59.6 percent of electricity access, not very far from Somalia's 49.5 percent – a country that is among the top 5 smallest economies in the region. Somalia also ranked similarly to Ethiopia (with a 54.2 percent electricity access rate) and relatively better than Tanzania and Angola (with 42.7 percent and 48.5 percent, respectively) – countries that made the top 10 largest economies in SSA in 2021.

Figure 5 Electricity Access of Top 10 Largest and Top 10 Smallest Economies in SSA (2021)



Source: Author, based on World Bank (2023c)

The logic of GDP versus electricity access can also be applied to analyze the variations between the availability of energy natural resources and the levels of electricity access. The Democratic Republic of Congo (DRC) is a perfect example to show that possession of energy natural resources is not a sufficient condition for the effective distribution of electricity access. The

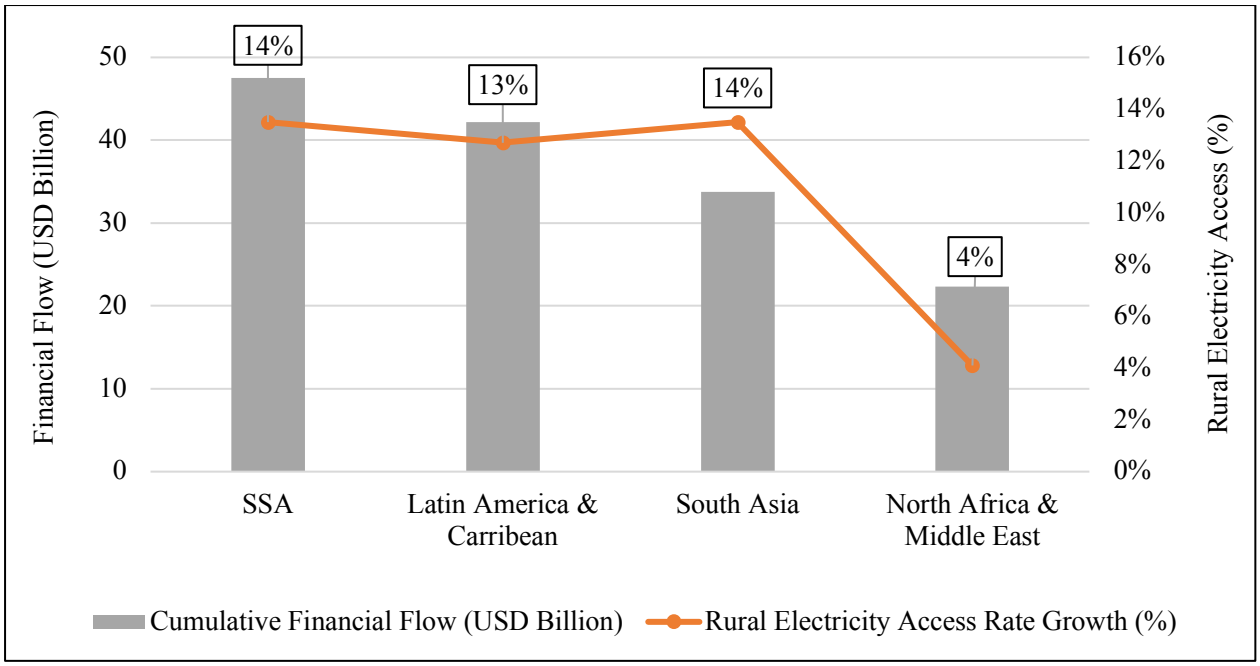
country is generously endowed with strategic energy resources such as oil, natural gas, uranium, hydroelectric, biomass, solar, wind, and geothermal energy (International Trade Administration, 2022); however, as illustrated in Figure 6, the country remains among the least covered electrified countries.

Mozambique also possesses significant unlocked energy potential, including natural gas, coal, and renewables – mainly solar and hydropower (EDM, 2023; HCB, 2023; ALER, 2022; EnergyPedia, 2023). Despite all the potential, the country ranks among the least-electrified countries in the SSA region. Besides a lack of financial resources for developing energy infrastructure, the sector's governance has been controversial and markedly associated with inefficiencies and political interferences that constrain the national electricity utility company's ability to expand access. A detailed description of the electricity system is made in Chapter 3.

On the financial side, for example, many African electricity utilities recently increased their debt levels to keep electricity tariffs affordable to their clients (IEA, 2023a). However, the energy development investment is still incipient despite massive available financial schemes. Furthermore, while subsidies in SSA countries are considered excessive and unsustainable, they do not necessarily and always serve economic purposes and often serve political expedients (Kojima, Bacon and Trimble, 2014).

For example, as Figure 6 illustrates, between 2010 and 2021, the SSA region received more official financial support for renewable energy than any other developing region. Despite this reality, rural electricity access in the region remains significantly low (about 30% in 2021) compared to the rest of the developing regions – varying between 85 percent and 98 percent in the same period, as shown in Figure 1.

Figure 6 Renewables Financing vs Rural Electrification by Developing Region (2010-2021)



Source: Author, based on IBRD (2023:168) and World Bank (2023a)

As SSA is the most economically underdeveloped region of the world, one would assume straightforwardly that the explanation for the low levels of economic development and lack of financial resources are the adequate answers. While economic factors cannot be ignored, this section showed that further elements beyond economic reasons can explain the region's low electricity access rates. The following subsection addresses the merits and shortcomings of the socioeconomic perspective in explaining the persistent energy poverty many developing countries face.

2.1.2 Socioeconomic Perspective

Poverty levels and demographic structures are significant factors in the distribution of electricity access. Past research on socioeconomic factors of electricity access generally indicates that the

level of energy poverty varies according to countries' economic development levels – including levels of income inequality and household consumption expenditures (Igawa & Managi, 2022; Sharma et al., 2019; Sovacool, 2012) and demographic factors such as ownership status, education level, labor force status, and household size (Primc et al., 2019; Streimikiene & Kyriakopoulos, 2023).

For example, Igawa and Managi (2022) stated that a household is more prone to face energy poverty when (i) the country's level of economic development is lower and (ii) the country has considerable income inequality. Also, access to a single unreliable electricity access solution is associated with welfare losses for households in developing countries, influencing their willingness to pay for the services (Streimikiene & Kyriakopoulos, 2023:8).

On the demographic side, the most claimed issues are low population density, the remoteness of small communities, and the high costs of electricity generation, transmission, and distribution (Longe et al., 2017; Sovacool, 2012). Energy-poor households are characterized by the interrelation between socio-demographics – including ownership status, level of education, the status of the labor force, and size of household) and housing characteristics (Primc et al., 2019). Urbanization influences the allocation of electricity access throughout rural areas, as the expansion of urban areas concentrates the allocation of infrastructure in urban areas while subjecting the rural areas to the second plan (Acheampong et al., 2023:13).

Household income, affordability of products in the market, and education levels influence the adoption of SHS (Aarakit et al., 2021; Jan et al., 2020; Yuan et al., 2011). Jan et al. (2020:6) state that there is a link between household income levels and social acceptability of technologies related to solar photovoltaic (solar PV) energy, such as SHS – where high-income households are faster in adhering to the solutions than those under the low-income category. Yuan et al.

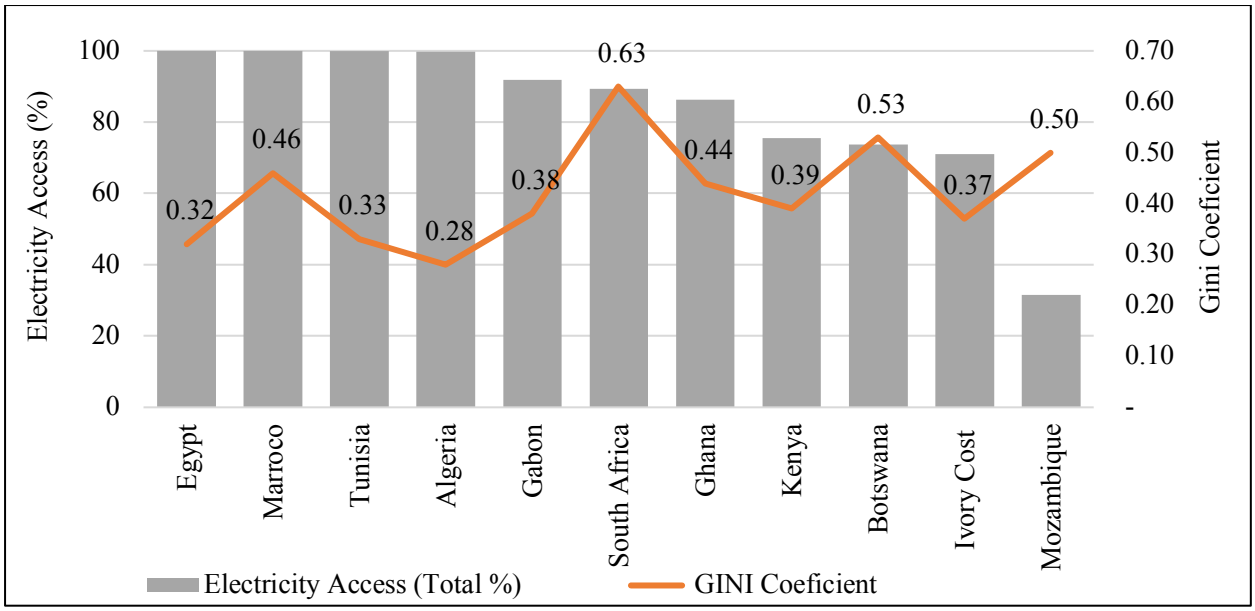
(2011:1033) consider that generally, individuals with relatively higher incomes tend to have more awareness regarding the advantages of adopting SHS than those with relatively lower incomes.

Demographic factors for the adoption of SHS include the age of the head of household (Shakeel et al., 2023; Yuan et al., 2011). Younger people (who tend to be the side with limited purchasing power) tend to perceive more advantages in adopting SHS. In comparison, older people, who tend to have better purchasing power than young people, tend to perceive less benefit in adopting SHS solutions (Shakeel et al., 2023:8-9). This collides with the claim by Yuan et al. (2011) that adults tend to be more aware of Solar PV-based solutions than younger individuals, and the awareness is higher among individuals in urban areas than individuals in rural areas.

Like the economic perspective, the socioeconomic perspective cannot fully explain why many developing countries struggle to transform their energy sectors and target citizens with adequate services. Figure 7 shows significant incongruence when pairing the Gini Coefficient[1] and the levels of electricity between the top 10 most electrified countries in Africa and Mozambique in 2021. It informs that while some of the top 10 most electrified countries – mainly Egypt, Tunisia, and Algeria – recorded inequality levels that were relatively consistent with their levels of electricity access, others – mainly Morocco, South Africa, Ghana, and Botswana – recorded as relatively high as Mozambique, which recorded one of the worst electricity access levels in the same period. It suggests that inequality levels may not be the most determinant driver of these countries' success in expanding electricity access.

[1] Gini Coefficient is one of the most used index to measure economic concentration and income disparities among citizens within given society, where 1 represents highest level of inequality between people and 0 represents perfectly equal society (Wisevoter, 2024).

Figure 7 Gini Coefficient of the Top 10 Most Electrified African Countries and Mozambique (2021)



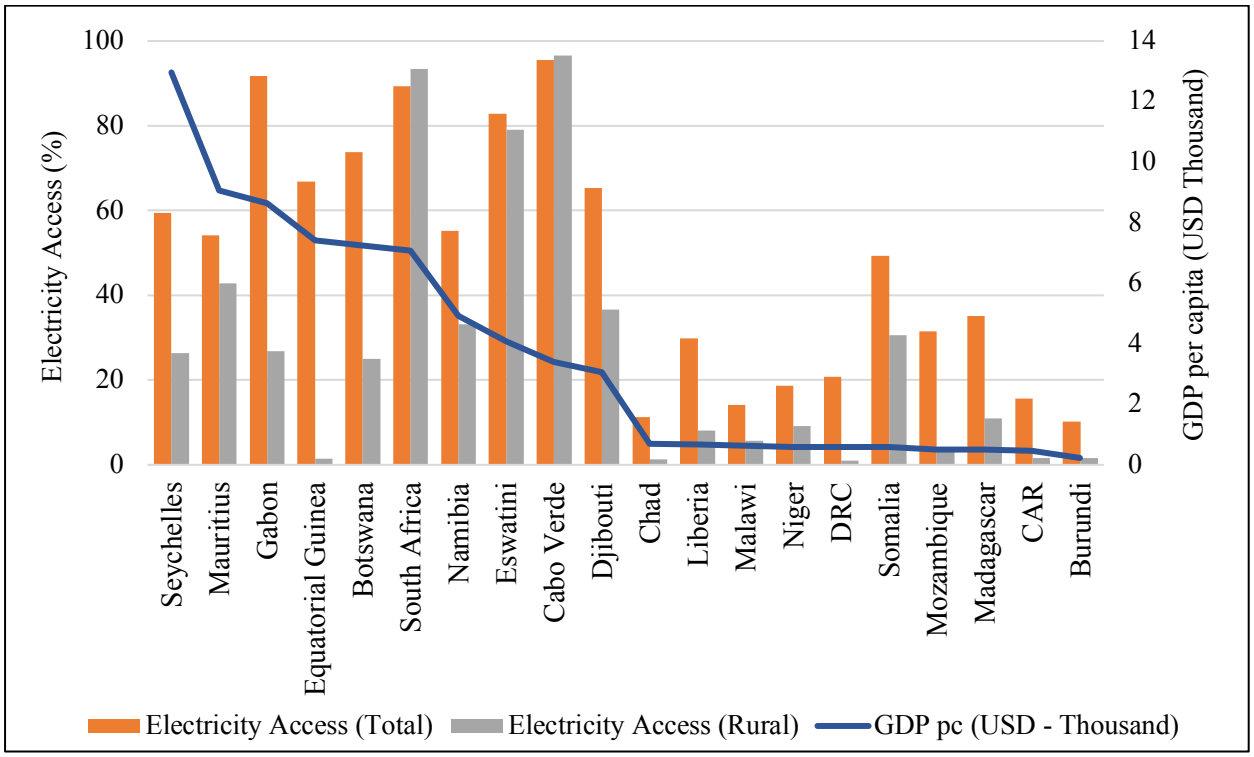
Source: Author, based on World Bank (2023b) Wisevoter (2024)

A comparison of GDP per capita and access to electricity between the top 10 wealthiest countries and the top poorest countries in SSA also corroborates that income levels cannot entirely explain why many developing countries struggle with low electricity access. Figure 8 shows that Seychelles, Gabon, and Botswana, three of the top 10 wealthiest countries in SSA, recorded up to 26.8 percent of rural electrification rate in 2021, below the top 5 poorest countries in the region, Somalia, which recorded 30.6 percent in the same year.

While Figure 8 shows relative inconsistency between GDP pc and electricity access levels across the countries, particularly if looking at the top 10 wealthiest countries, it still indicates relative consistency when looking at the top 10 poorest countries, including Mozambique. However, a closer look at the GDP pc across the top 10 poorest countries, including Mozambique, suggests a degree of inconsistency as the countries generally have lower electricity access rates than the top

10 wealthiest countries. For example, as Mozambique ranked 4th poorest country, it recorded relatively better electricity access rates (notably the total rate, 31.5%) than Chad (11.3%), Liberia (29.8%), Malawi (14.2%), Niger (18.6%), and DRC (20.8%) who ranked from 10th to 6th poorest, respectively. Furthermore, The case of Somalia is even more intriguing, as the country has experienced prolonged civil conflict as many militarized factions compete for power sharing and face severe humanitarian crises (UN News, 2021).

Figure 8 Electricity Access of Top 10 Richest and Top 10 Poorest SSA Countries (2021)

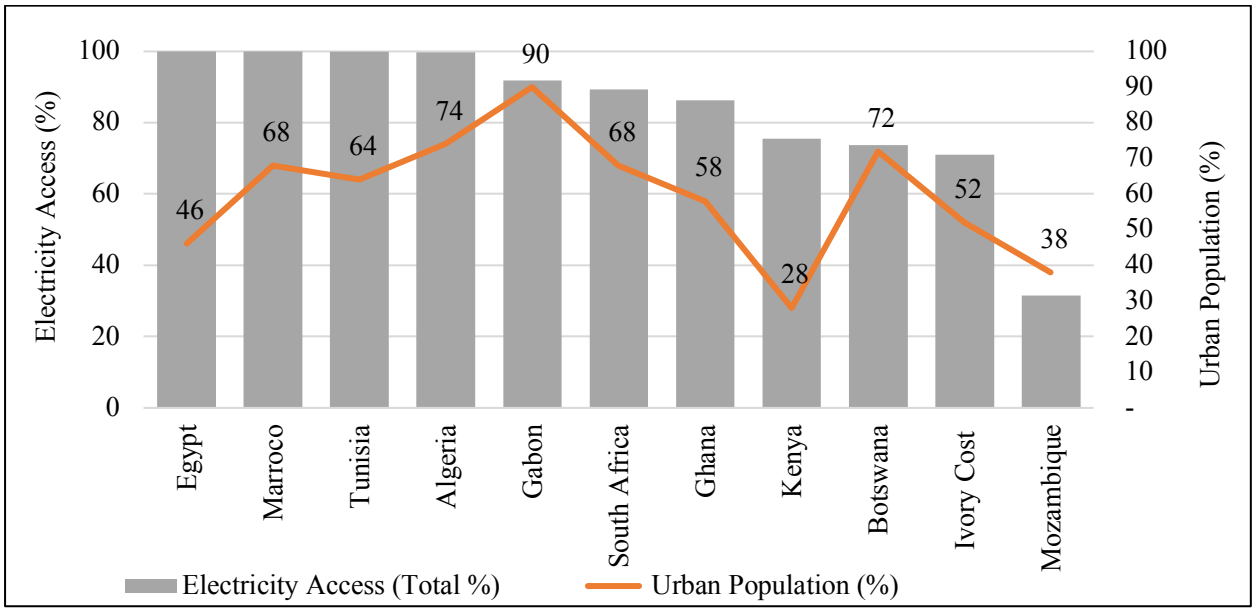


Source: Author, based on World Bank (2023a) and World Bank (2023c)

A comparison of urbanization rates with electricity access levels across the top 10 most electrified African countries reveals interesting outcome. As illustrated in Figure 9, the top 3 most electrified countries in Africa in 2021 did not rank among the most urbanized countries – according

to the percentage of urban people. Also, Kenya ranked 8th most electrified county in Africa in 2021; yet recorded a "modest" 28 percent of urban population in the same period, below Mozambique (38%) – which is one of the least electrified countries in the continent, with 31.5 percent in 2021. These inconsistencies reinforce the assumption that socioeconomic perspective cannot entirely explain the factors behind the persisting energy poverty in many developing countries, particularly in SSA.

Figure 9 Urbanization Rate of the Top 10 Most Electrified African Countries and Mozambique (2021)



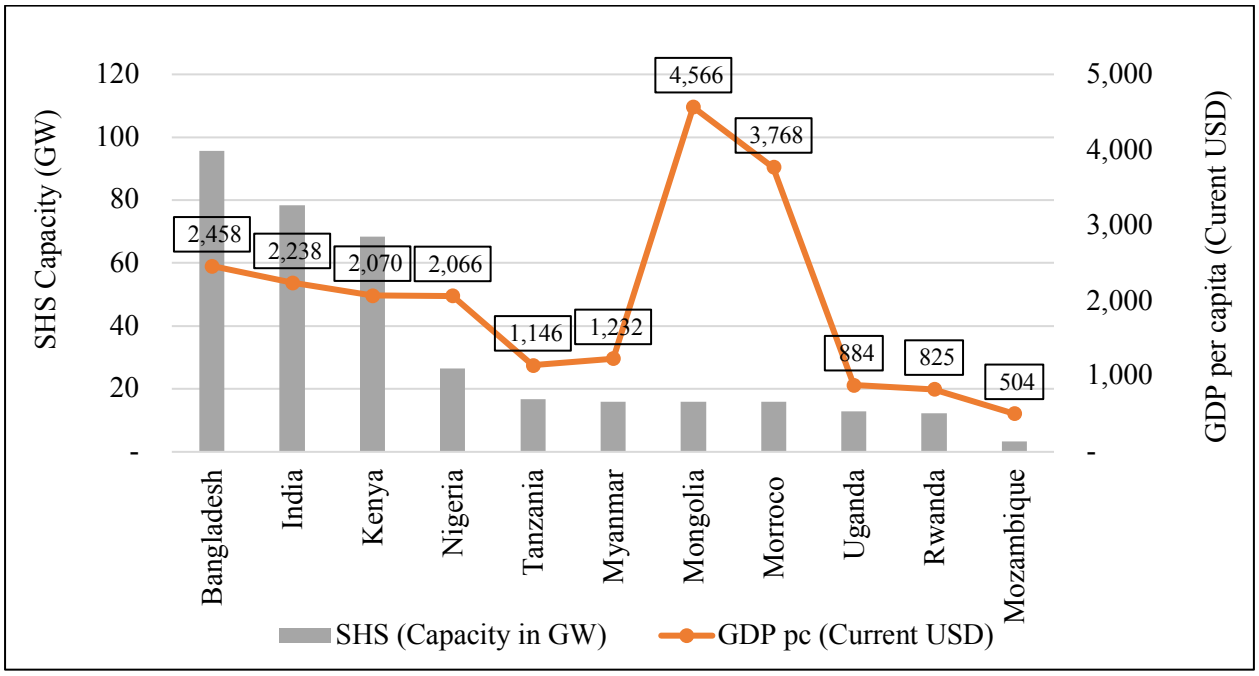
Source: Author, based on World Bank (2022)

Concerning the adoption of SHS, a comparison between the top 10 largest adopters of the technology shows that income level is not always consistent with the level of energy expansion. Figure 10 illustrates a relative consistency between GDP pc and the total capacity of instilled SHS for some countries like Rwanda, Uganda, Tanzania, Myanmar, and Mozambique; however, a

considerable contradiction is also observable between Mongolia and the top 3 largest adopters – Bangladesh, India, and Kenya. While Mongolia has the highest GDP per capita amongst the top 10 yet, its adoption of SHS is far below Bangladesh, India, and Kenya. Furthermore, Nigeria has a similar GDP per capita to Kenya's; however, Kenya's adoption of SHS is twice as high as Nigeria's.

In countries like Mozambique, where rural low-income households cannot afford to pay for energy services, solutions like SHS have become a symbol of "energy inclusion." However, there is a lack of government support – like fiscal incentives – to the segment of SHS, which is available in countries like Bangladesh, India, Kenya, and Tanzania. The scenario suggests that the SHS remains far from reaching its potential to reduce energy poverty in Mozambique – although its promotion remains a written priority (along with other decentralized off-grid solutions) in the policy framework described in Chapter 3.

Figure 10 GDP per capita of Top 10 SHS Adopters and Mozambique (2021)



Source: Author, based on IRENA (2023), World Bank (2023c)

Bangladesh, which is significantly far from making the top 10 countries with Southeast Asia's highest GDP and GDP per capita (The Global Economy, 2022), has implemented the most extensive SHS program globally. On the other hand, Kenya, which is not among the largest economies in SSA nor the highest GDP per capita, managed to implement the biggest SHS in Africa. One would ask: How did countries like Bangladesh, India, and Kenya become the top adopters of SHS in the world? While the answer would require various considerations, it can be anticipated that economic and socioeconomic did not play a decisive role; however, the political will did. Governing elites' commitment to advancing the adoption of SHS technology in these countries was crucial for relative success.

Ultimately, inequality levels, poverty, and other socio-demographic aspects do, to some degree, explain why some countries managed to expand electricity access significantly while others have struggled to do so. However, the variations demonstrated in this subsection include the significant achievements of countries like Bangladesh and Kenya in advancing access through SHS. Also, Equatorial Guinea has a relatively high GDP per capita; yet a shallow rural electrification rate. The following subsection addresses the merits and shortcomings of the institutional perspective in explaining the persistent energy poverty many developing countries face.

2.1.3 Institutional Perspective

The modest implementation of the electricity reform and unsatisfactory outcomes in the electricity expansion in many countries in SSA, South Asia, and Latin America are, to a considerable extent, associated with weak institutions (Gore et al. 2018). State-controlled entities typically lead the policy formulation process in these countries, and the participation of non-state actors (e.g., private

sector and civil society) in the policymaking process is generally significantly limited (Gore et al. 2018).

Government intervention is widely accepted as a crucial step to its adoption (Karakaya & Sriwannawit, 2015; Ngonda, 2022). Aspects such as the effectiveness of the government and policy adequacy determine how electricity is distributed (Nguyen & Su, 2022; Best & Burke, 2017; Kachapulula-Mudenda et al., 2018; Williams et al., 2015). For example, increases in government expenditures in countries with low institutional quality increase energy poverty, while the opposite leads to a different outcome – meaning that the effects of government spending on energy poverty for high institutional quality are positive (Nguyen and Su, 2022).

The institutional perspective helps understand the impact of the effectiveness of the sector's policy regime on investment, particularly the inappropriateness and confusing licensing and incentive regime that blocks the ability of the private sector to invest in the expansion of electricity infrastructure. Some of the most highlighted risks associated with institutional inadequacy include market entry: licensing, procurement and tendering, and legal framework; clarity of government investment priorities – government plans for electricity generation and transmission and required technical standards; assurance of cash flow return – costs recovery and return on investment, ability to enforce payment discipline, and government support (Probst et al., 2019).

The effectiveness of governments is crucial in supporting the transition to improved access to electricity in developing countries (Best & Burk, 2017), which means that having an inadequate policy leads to underserved populations, resulting in an underexploited renewable energy sector and reliance on conventional solutions such as hydropower-based solutions and national utilities and barriers to the successful adoption of clean energy technologies (Kachapulula-Mudenda et al., 2018). Coupled with high risk related to decentralized electrification projects in low-income

regions, low returns on investment, and lack of well-defined and effective public policy can constrain the private sector interest in participating in projects (Williams et al., 2015).

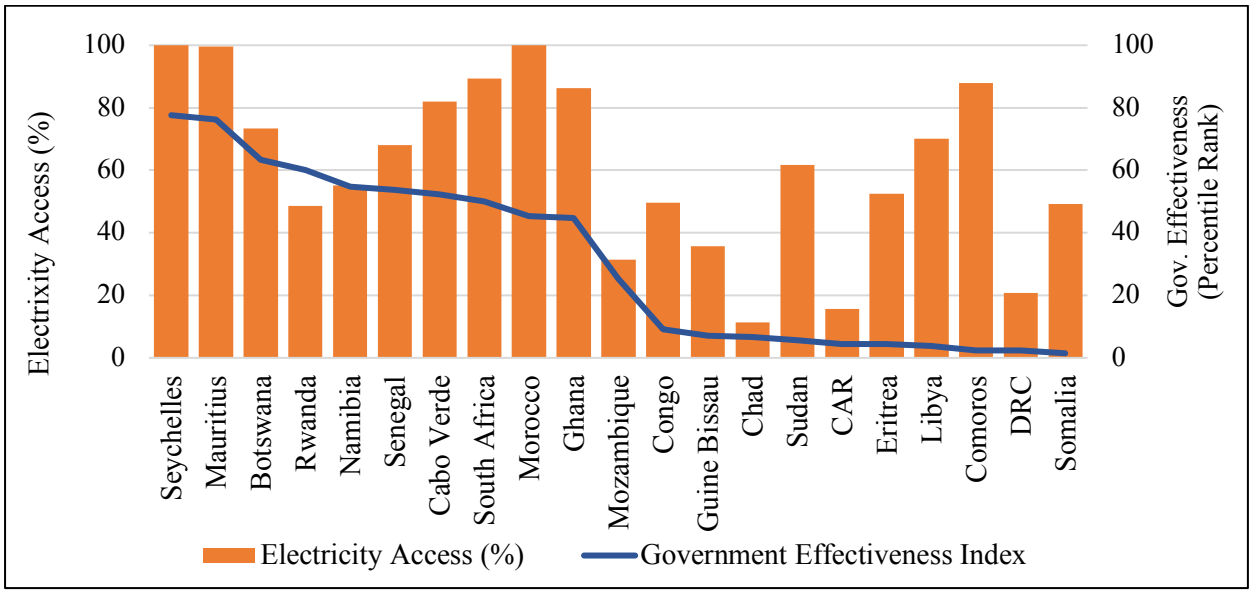
Regarding adopting SHS, regulatory factors play a significant role (Jirakiattikul et al., 2021; Shakeel et al., 2023; Zhu et al., 2011; Acheampong et al., 2023). Government interests are crucial for adopting any technological solution, such as solar PV (including SHS), precisely because it can adopt and implement subsidies and incentives to promote people's adherence to such solutions (Shakeel et al., 2023). Given that adopting solar PV-based solutions, including SHS, involves high initial costs, the deployment of incentives by the government becomes a critical measure to minimize investment costs and capital loss (Jirakiattikul, Lan and Techato, 2021). The availability of subsidies, incentives, and after-sale services significantly influence rural residents' adoption of renewable technologies (Zhu et al., 2011). While assessing the limiting factor to the adoption and expansion of renewable technologies – including SHS – Zhu et al. (2011:227) considered the high initial cost and lack of incentives as challenging factors that prevent the dissemination of such solutions. Good governance can expand electricity access and pave the way for adopting renewable technologies by implementing energy policies (Acheampong et al., 2023:4).

When it comes to providing a holistic framework of the understanding of energy poverty in the developing world, the institutional perspective cannot address the question: why, despite the state's challenge in investing in electricity expansion, does the private sector face significant barriers to participate in the expansion of electricity? Also, why does the adoption of SHS remain incipient? These questions go beyond the scope of the institutional perspective. Another question that deserves emphasis is: why are the government's ambitious policies targeting the expansion of electricity generally not followed by political commitment for their implementation?

The comparison between the Government Effectiveness Index[2] and electricity access between the top 10 most effective governments and the top 10 most ineffective governments in Africa in 2021 – depicted in Figure 11 – reveals that levels of access to electricity are not always consistent with institutional quality. While some cases show relative consistency – notably Seychelles, Mauritius, Morocco, and Ghana (top 10 most effective governments) and DRC, CAR, and Chad (some of the top 10 most ineffective governments), others confirm the contradiction. First, Comoros and Libya ranked 187 and 185 out of 191 countries in the world and are two of the worst in Africa; yet, they managed an electricity access rate of 87.9 percent and 70.2 percent, respectively, which is better than Botswana, Senegal, Cabo Verde, South Africa, and Ghana (seven of top 10 most effective governments in Africa) and significantly better than Rwanda and Namibia (two of top 10 most effective governments in Africa). Second, Mozambique, a country in position 148, neither in the top 10 most effective governments nor in the top 10 most ineffective governments in Africa, ranked significantly worse than most of the top 10 most ineffective governments, except for CAR, Congo, and Chad. Third, while the cases of Mozambique, CAR, DRC, Mauritius, and Seychelles show consistency between government effective index and electricity access, the cases of Comoros, Libya, Rwanda, and Namibia show the opposite.

[2] The index assesses perceptions of the quality of public services, civil service and the extent to which they are free from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. The index measures from 0 (week governance) to 100 (strong governance) (The Global Economy, 2023).

Figure 11 Electricity Access vs Government Effectiveness in Africa (Top 10 Effective Governments, Top 10 Ineffective Governments and Mozambique) – 2021



Source: Author, based on World Bank (2023a) and The Global Economy (2023)

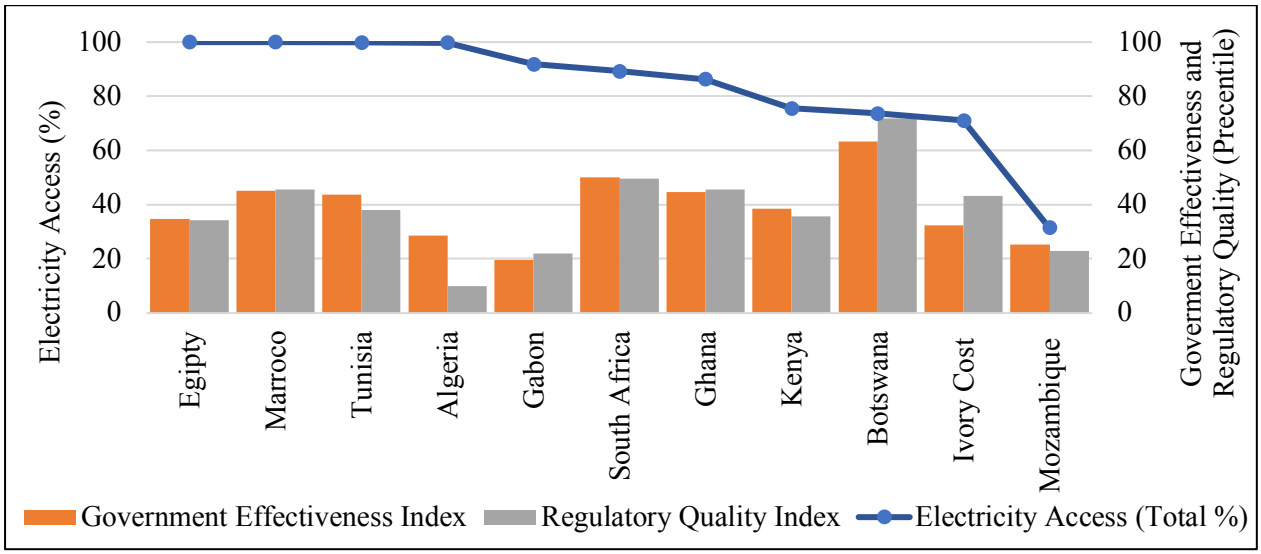
The comparisons between the Government Effectiveness Index and Regulatory Quality Index[3] with electricity access rates demonstrate that aspects like quality of services, political pressure towards the government, and quality of policy formulation and implementation may be crucial in some countries' progress in expanding electricity access but may not be in other countries. These inconsistencies corroborate this dissertation's claim that the institutional perspective cannot fully explain why many developing countries struggle to advance the levels of electricity access.

Taking the top 10 most electrified African countries as a reference, their rankings on the Government Effectiveness Index corroborate that institutional quality is not always a crucial

[3] Regulatory Quality Index is one of the six World Bank's Institutional Capacity Indicators, with ranks ranging from 0 (weak) to 100 (strong) and gathers perceptions of the ability of the government to formulate and implement sound policies and regulations that allow and promote the development of private sector (Kaufmann and Kraay, 2023).

indication of performance in electricity access. On the one hand, Figure 12 shows that despite scoring relatively poorly in the government effectiveness index, Algeria and Gabon hold two of the best electricity access coverage in the continent, with 99.8 and 91.8 percent, respectively, in 2021. On the other hand, Botswana, a country with the highest score in government effectiveness index among the top 10 most electrified countries in Africa, had an electricity access rate of 73.7 percent – relatively lower than Gabon's, the country with the weakest score of government effectiveness index among the top 10 most electrified countries in Africa.

Figure 12 Government Effectiveness of the Top 10 Most Electrified African Countries (2021)

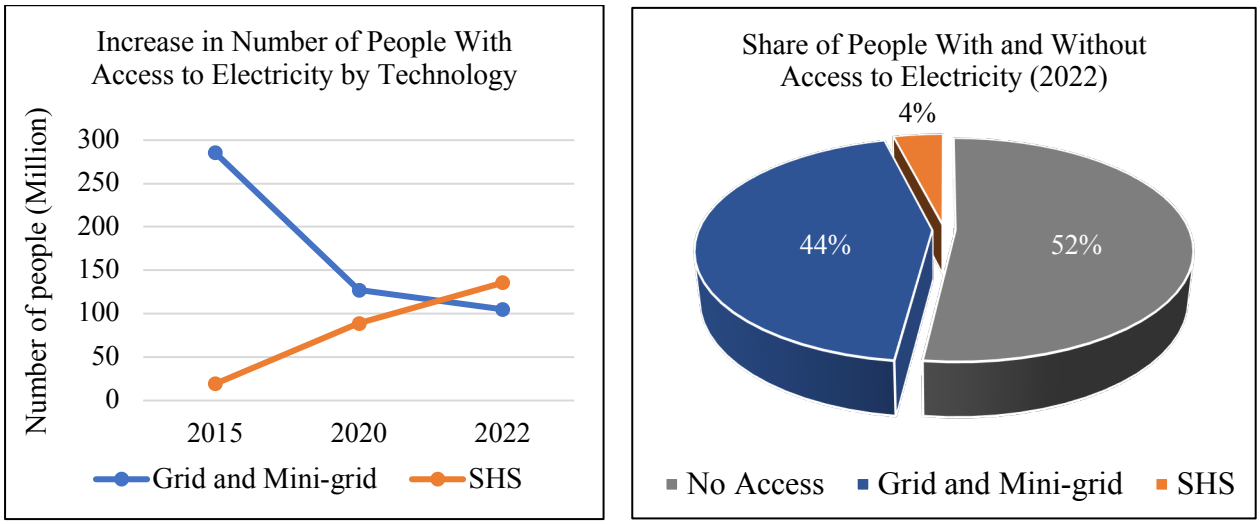


Source: Author, based on World Bank (2023a) and The Global Economy (2023)

Concerning the adoption of SHS, although it has been gaining track as a cost-effective solution to tackle energy poverty in some developing countries, it remains unclear why it has received limited support policy support from governments. Figure 13 shows that the SHS surpassed

grid and mini-grid[4] extension in terms of annual growth in the number of people targeted; however, its contribution to the percentage of people with access to electricity by 2022 (48%) remains relatively low (about 4%). As the institutional perspective discusses, institutional quality is a significant constrain – in the sense that the low quality of policy and regulatory frameworks and the low quality of agencies that oversee the energy sector result in ineffective deployment of necessary infrastructure and services to expand and tackle the irregular distribution of electricity access in many developing countries.

Figure 13 Access to Electricity by Technology in SSA



Source: Author, based on IEA (2023a)

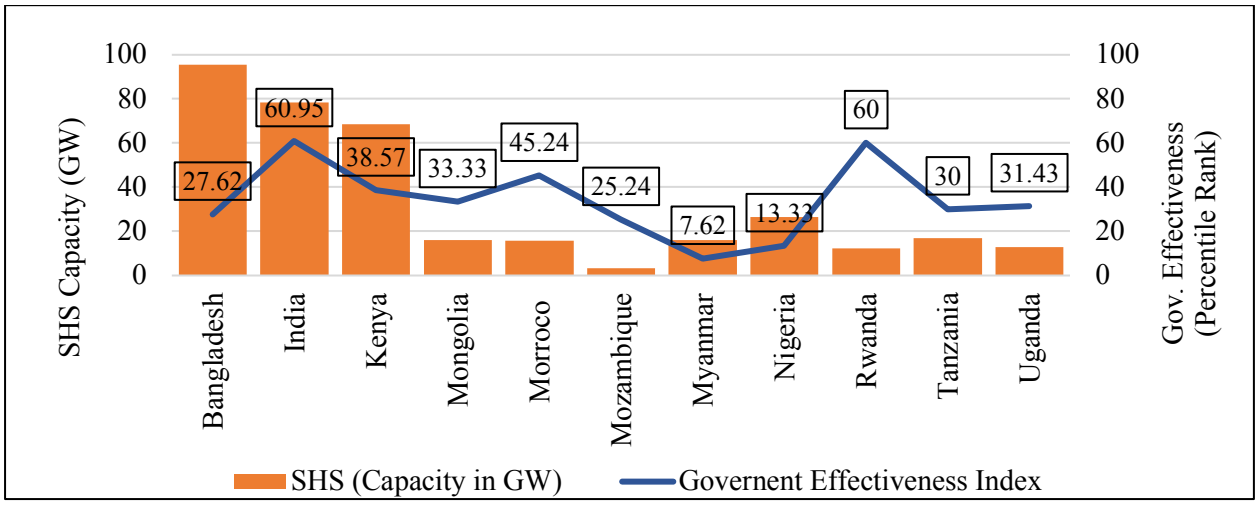
The current implementation of the electricity policy framework in Mozambique lacks incentive for the private sector to play a significant role. Also, it lacks incentives for off-grid

[4] Mini-grids are a solution to energy needs that combine small renewable energy installations with a battery or generator, which produces electricity close to where it is used while eliminating the need for long-distance transportation (IEC, 2024).

solutions, particularly the SHS. The on-grid sector benefits from more incentives than the off-grid sector. While the implementation contradicts the manifests in the policy framework, public and private stakeholders advocate for eliminating market barriers. Ambitious measures announced in the policy framework, such as the deployment of fiscal incentives (detailed in Chapter 3), are yet to be implemented.

The comparison of the Government Effectiveness Index of the top 10 SHS adopters, as shown in Figure 14, reinforces that institutional quality was not crucial in Bangladesh's remarkable achievement in the SHS segment. Also, Mozambique has a government effectiveness score that is as good as Bangladesh's, yet its level of adoption is near the top 10. Rwanda, which has the second-best government effectiveness score, has almost nine times less SHS capacity than Bangladesh. Government intervention was crucial for strategic partnerships with development agencies and the private sector.

Figure 14 SHS Capacity vs Government Effectiveness (Top 10 SHS Adopters and Mozambique) – 2021



Source: Author, based on IRENA (2023) and The Global Economy (2023)

While in Bangladesh, India and Kenya, the respective governments have adopted specific measures – including fiscal incentives – to elevate the adoption of SHS (Hellqvist & Heubaum, 2022; Frayer, 2022; Wagner et al. 2021; Bernal-Agustín & Dufo-Lopez, 2009; Adwek et al., 2020; George et al., 2019), in Mozambique, the government is yet to follow the model. The lack of fiscal incentives for SHS in Mozambique has other explanations than institutional quality or government effectiveness. It is related to politics, as ruling elites do not see the benefits of promoting the solution.

Ultimately, as discussed so far, it can be anticipated that a country's economic development, availability of financial resources for energy development, and availability of energy natural resources, socioeconomic conditions – such as poverty, income inequality, demographic, and institutional quality are consistent with the levels of electricity access in some countries and regions but inconsistent for other countries and regions. While these factors should not be ignored when explaining the persistent energy poverty many developing countries face, it is also evident that they, individually, provide little comprehensive framework to understand the complexities behind the various outcomes in different developing countries and regions.

2.1.4 Political Perspective

The extant research addressing political factors of electricity distribution emphasizes the state's role in the outcomes of public goods distribution, the differences in political regimes, and the country's stability. As mentioned earlier, while these factors help understand the patterns of electricity access and may explain the reasons behind some country's relatively low levels of electricity access, they cannot account for all reasonings behind the various outcomes of electricity distribution in most developing countries, as they cannot explain some cases of developing

countries whose relative success in expanding electricity access defies the logics of country stability and political regimes. Furthermore, the role of society – a crucial aspect of the distribution of public goods by the state – has not received much attention. For example, how different interest groups try to influence the policymaking process and how these attempts result in different outcomes in distributing public goods, including access to electricity.

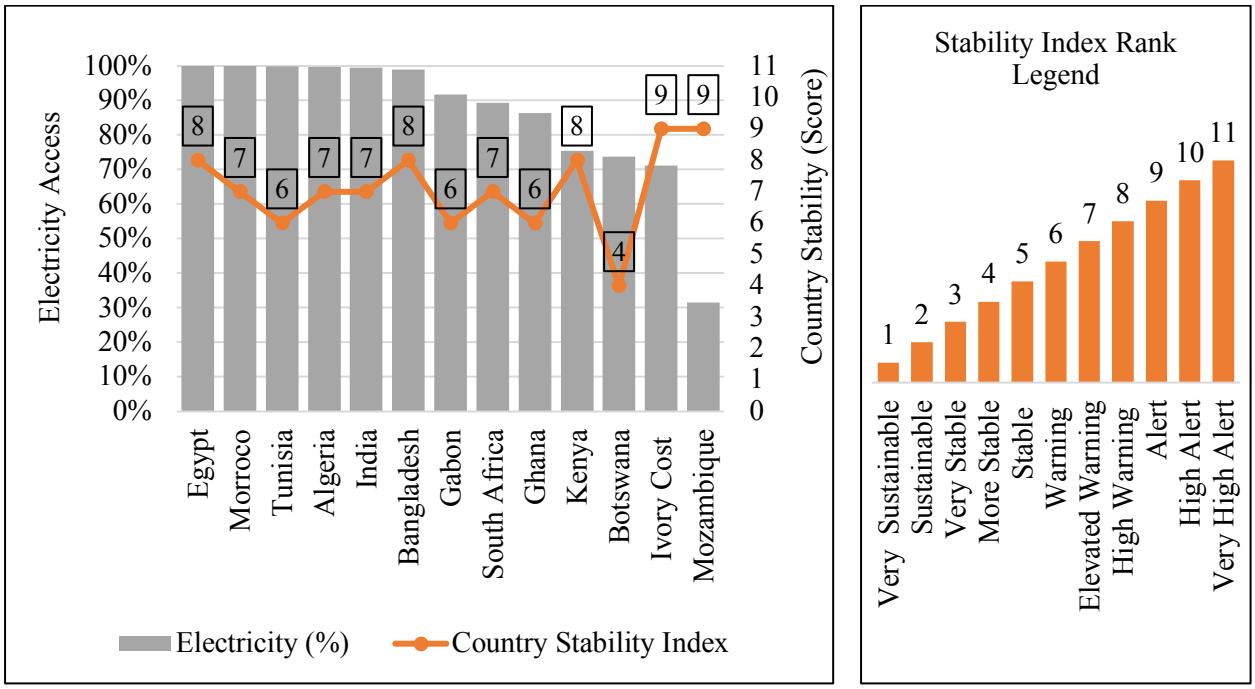
The political stability factor undeniably interferes with the quality of the regulatory framework, government effectiveness, and the rule of law. It ultimately has a significant influence on the outcomes of public goods distribution, including the distribution of electricity access (Acheampong et al., 2023:9). While political stability is a crucial element to understanding how countries can perform well under a stable political environment, it may be limited in explaining why some countries with long history of political instability managed to expand electricity access and rank better than many countries that are considered politically stable. For example, why does Somalia, a politically unstable country (Freedom House, 2023a), have better electricity access coverage than relatively politically stable countries like Mozambique, Madagascar, and Malawi? Why isn't Rwanda – one of the most stable countries in Africa – among the most electrified countries in the continent?

According to the Fragile State Index[5] in 2021, as depicted in Figure 15, Gabon and Ghana ranked "warning," Morocco, South Africa, and Senegal ranked "elevated warning," and Egypt and Kenya ranked "high warning." Most of these countries have a long history of political instability (The Fund For Peace, 2021; Freedom House, 2023a). The message is that all these countries ranked

[5] Measures indicators that include political indicators, cohesion indicators, economic indicators, and social and cross-cutting indicators, measures countries' stability by attribution scores varying from 1 (Very Sustainable) to 11 (Very High Alert) (The Fund For Peace, 2021).

in the top 10 most electrified in Africa in 2021, yet political stability may not be among the crucial factors for their relative success. However, the case of Mozambique and Botswana may suggest otherwise, as both countries' electricity access rates are, somehow, consistent with their scores in the Political Stability Index – Higher points in political stability for low electricity access and lower points of political stability for higher electricity access rate, respectively.

Figure 15 Electricity Access vs Country Stability of the Top 10 Most Electrified African Countries, Top 3 Largest SHS Adopters and Mozambique (2021)



Source: Author, based on World Bank (2023c) The Fund For Peace (2021)

Looking at the differences in political systems can help make sense of various outcomes in distributing public goods. In general, effective distribution of public goods is associated with democratic regimes – citizens have relatively more opportunities to influence the decision-making process than non-democratic regimes. Some research, notably by MacLean et al.(2016), Gore

(2018), Scott & Seth (2013), Spalding (1989), and Kalu (2017), provide relevant insights into this. However, there are several examples of countries in which political regimes are considered non-democratic and manage relative success in the distribution of electricity access. Acheampong et al. (2023:4-5) see more than positive policy feedback in democracies. According to them, although leaders can be held accountable for their performances and be compelled to do so effectively, democracy can also widen the gap in electricity access between urban and rural areas – as generally, urban residents have more opportunities for political participation than the rural residents; therefore, the former has more possibilities to influence the patterns of allocation of the service. This dissertation seeks to explain why some states that perform poorly in governance indicators have managed success in expanding electricity access, but others, like Mozambique, struggle.

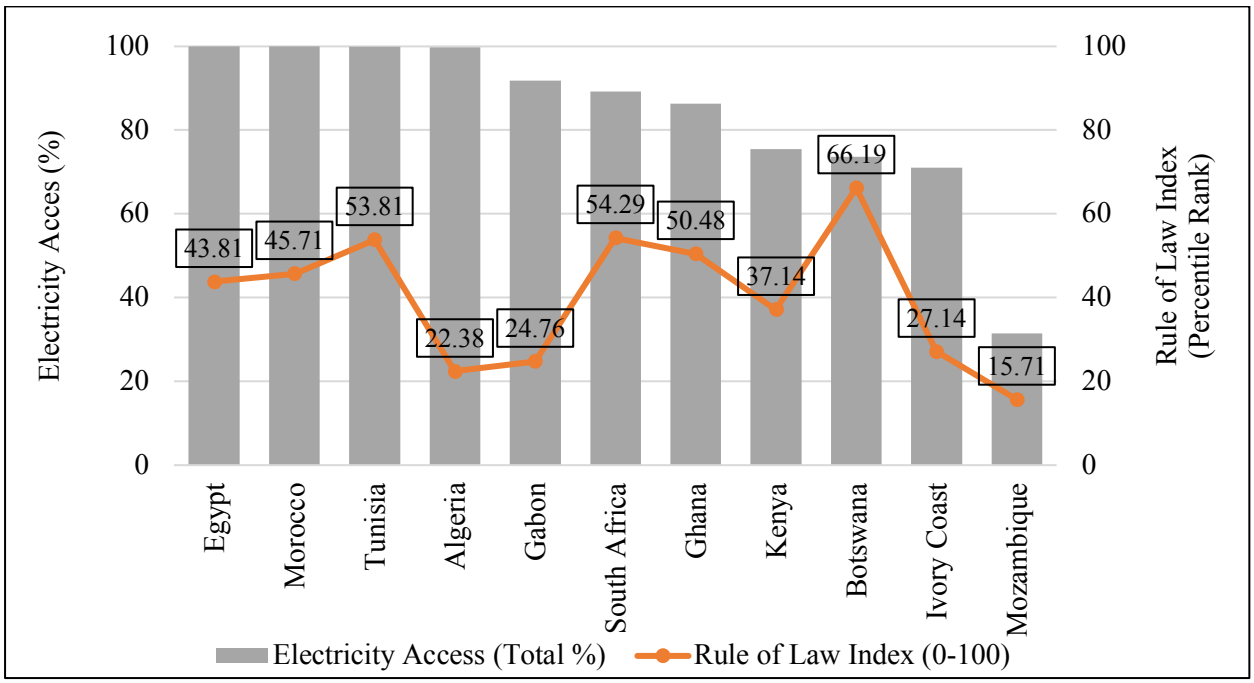
In settings where political accountability for electricity is weak, supplying electricity to groups and deploying subsidies may be used to secure political advantage. As stated by Scott and Seth (2013:11), this may partially result from weak governance of the sector. However, while the role of the quality of governance in the outcomes of the expansion of electricity access cannot be denied, it is also uneasily justifiable that countries with serious governance issues somehow managed to advance electricity access without looking at the issue from other perspectives.

Taking the Rule of Law Index[6] as a reference, the comparison of the performance of the top 10 most electrified countries in Africa and Mozambique suggests that there is a relative consistency between the quality of the rule of law and the levels of electricity access; however, some variations challenge the notion. It implies that in some cases, the rule of law may be a crucial factor in

[6] With percentile ranks ranging from 0 (weak) to 100 (strong), captures perceptions of the degree of confidence to which agents abide by the rules of society. Specifically, it measures the quality of contract enforcement, property rights, the police, and the courts, and probability of crime and violence (Kaufmann and Kraay, 2023).

expanding access to electricity, but not in other cases. Figure 16 illustrates that the countries are generally far from reaching the optimal situation of the rule of law (100 points), as the highest score (belonging to Botswana) is 66.19 points. Four countries scored above 50 points; the remaining seven, including the top 2 (Egypt and Morocco), scored 45.71 and below. While the trend generally implies consistency with the levels of electricity access, some cases, notably Algeria and Gabon, show inconstancy – as they have performed relatively "poorly" regarding the rule of law while recording more than 90 percent in electricity access. These variations signal that the rule of law alone cannot explain why some countries like Mozambique have low access to electricity.

Figure 16 Rule of Law in the Top 10 Most Electrified African Countries and Mozambique (2021)



Source: Author, based on World Bank (2023a), Kaufmann and Kraay (2023).

Other indicators worth exploring to assess the reasons behind the persisting energy poverty in many developing countries are citizens' participation and control of corruption. This dissertation considers that when the mechanisms of control are weak or absent, those holding power have the opportunity to use the power for individual or group interests. That means that when the ruling elites have substantial political control over society, the mechanisms of electricity distribution may become a mere tool for materializing their economic and political interests. Scott and Seth (2013:2) stated that when accountability between politicians and electricity consumers (citizens) and between politicians and electricity providers is weak, interest groups may be offered opportunities to receive electricity and advantageous tariffs or subsidies. It is also important to note that the degree of political control by the ruling elites also comes into play – the broader political control is, the greater the possibility of exercising control over the mechanisms of electricity access.

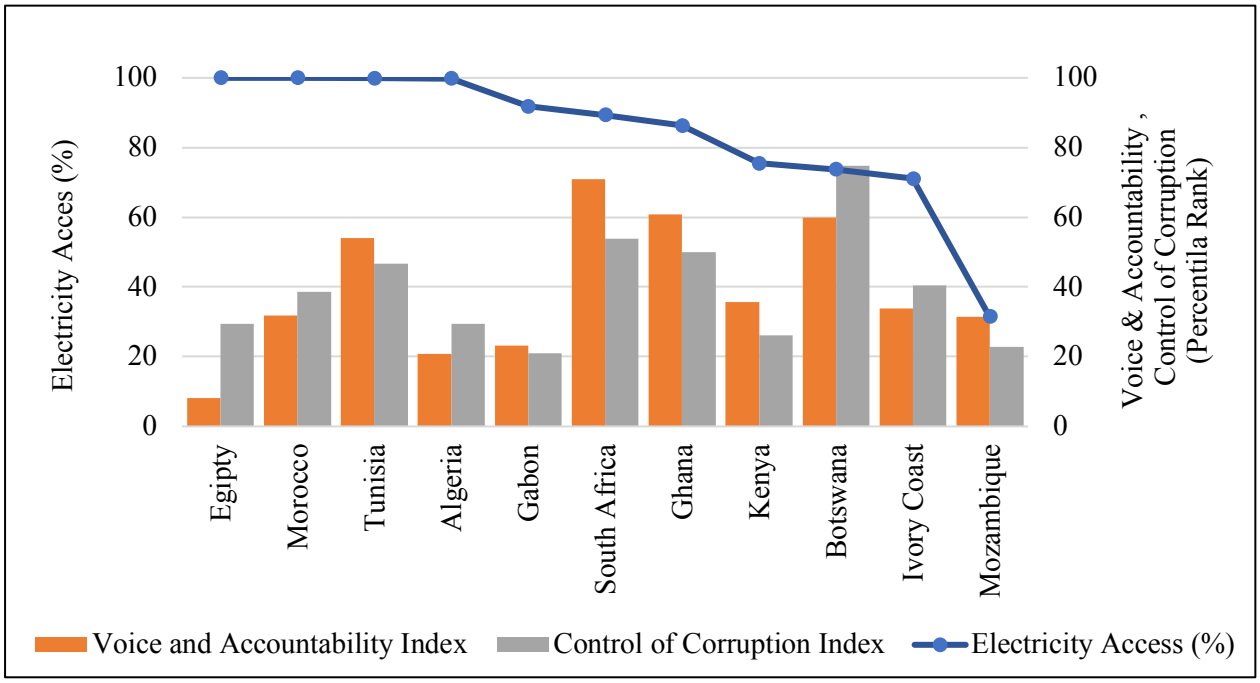
Taking the Voice and Accountability Index[7] and Control of Corruption Index[8] as references, the two factors are similar to the role of the rule of law. However, they can provide relevant insights into how different interest groups can attempt to influence the mechanisms of distribution of public goods, including electricity access. However, individually, they cannot account for the inconsistencies. As illustrated in Figure 17, a comparison of percentile points of citizen's freedom of participation, Voice and Accountability Index between the top 10 most electrified countries and Mozambique for 2021 shows that while the scores of Mozambique, Botswana, Ghana, and South Africa are relatively consistent with the electricity access rates, the remaining countries show

[7] With percentile ranks from 0 (weak) to 100 (strong), it assesses perceptions of the degree of citizens ability to participate in choosing government and freedom of expression, freedom of association, and a free media (Kaufmann and Kraay, 2023).

[8] With percentile ranks from 0 (weak) to 100 (strong), it assesses perceptions of the degree of promotion of public gain, including petty and grand corruption and state by private interests (Kaufmann and Kraay, 2023).

inconsistencies. On the one hand, low scores in both voice and accountability and control of corruption in Mozambique (31.4 and 22.86 points, respectively) are partially consistent with the low electricity access rate (31.5%). On the other hand, the relatively moderate scores of "voice and accountability" and "control of corruption" for Botswana, South Africa, and Ghana (between 50 and 74.76) are relatively consistent with their high electricity access rates.

Figure 17 Voice and Accountability and Control of Corruption in the Top 10 Most Electrified African Countries and Mozambique (2021)



Source: Author, based on World Bank (2023a), Kaufmann and Kraay (2023)

This dissertation suggests a more comprehensive look at the elite's political control and politicization of the electricity sector as a significant factor in the persistently low and irregular electricity access distribution many developing countries face. Sovacool (2012:279) describes how

the state often receives pressures to deliver effective public goods from different societal sectors, including electricity expansion, and the prioritization tends to resonate more with areas with higher potential for political support. Taking South Africa as an example, the country's current state of the electricity sector is a perfect example to explain how political pressure towards the sector can disrupt the technical efforts to deliver effective services. The country has recently experienced unprecedented electricity supply crises, with blackouts lasting 10 hours daily that led the government to declare a disaster (Chutel, 2023; Farmer, 2023).

Although South Africans have dealt with electricity crises for over 15 years, the issue has worsened in the last few years. The problem has been described as a consequence of political interference in the technical affairs of the public electricity utility company, Eskom, from the ruling party, the African National Congress – ANC (Muller, 2023). According to Chutel (2023), excessive subsidies for big industries, poor management, corruption, and successive mismanagement of the company by successive ANC administrations took Eskom to a "staggering" debt, shutdown of power stations, and collapse. As stated by Harding (2023), the crisis of load shedding in South Africa is rooted in political issues, corruption, and mismanagement at Eskom. The bottom-line message is that ANC's preeminent figures have systematically used Eskom for economic and political interests, thanks to its dominance in the country's political scenario. The historical Nelson Mandela's ANC has enjoyed significant political dominance since the end of the apartheid regime and the country's first democratic and multi-party elections in 1994. ANC has averaged around 65% of voter turnouts in the six elections (Electoral Commission of South Africa, 2023).

Similar to South Africa, in Mozambique, the elite's political control has been affecting the patterns of electricity access distribution. FRELIMO has been in power since 1975 and has ruled the country as the party-state until 1994, when the first multiparty elections were held. FRELIMO

has established a functional political and economic network where most opportunities are exchanged. As part of the control, the party has successfully influenced utility electricity company EDM and used it for the economic and political interests of its notorious leaders and influential groups associated with them. Non-transparent business, excessive tariffs, and lack of payments of bills by big industries are some of the politically-driven aspects that dragged EDM to unsustainable debt and inability to maintain and update the electricity systems and expand the service, particularly (Issufo, 2014; Visão, 2022).

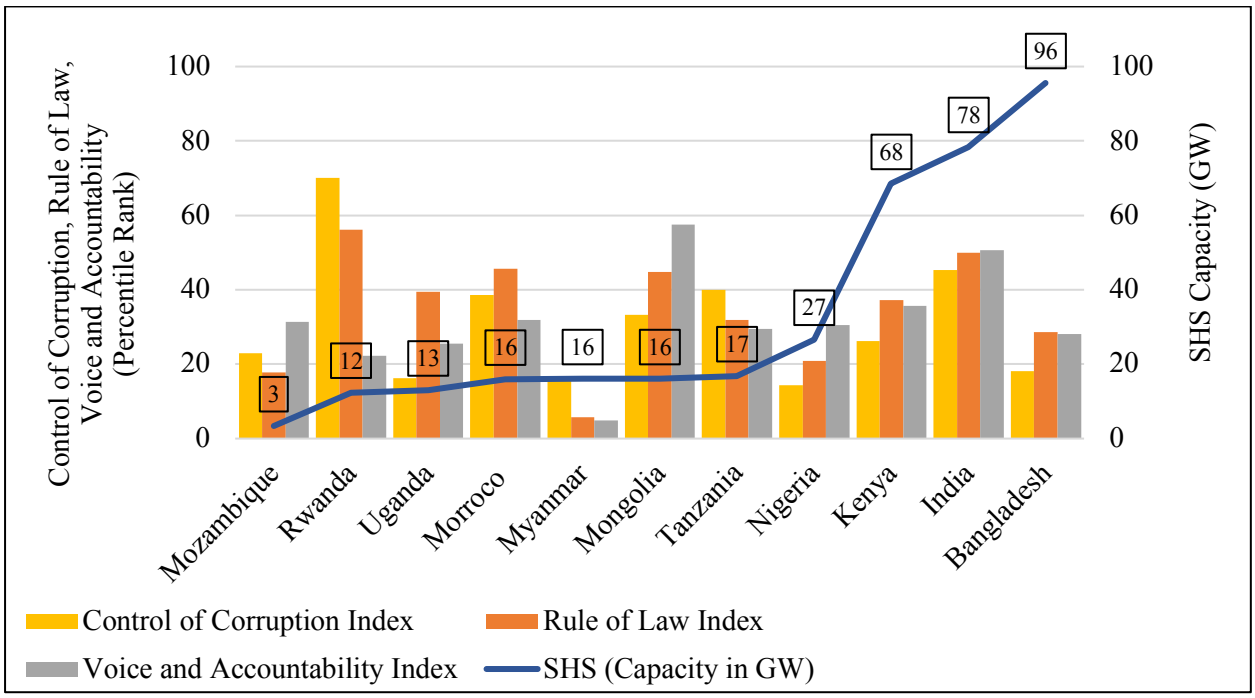
Although there are similarities between South Africa and Mozambique concerning the impacts of political pressures on the electricity sector, the issue in South Africa has been discussed and addressed by multiple interest groups in society like civil society organizations (CSOs), the judiciary, and political parties – which has been resulting in loss of public support for ANC – now estimated at historically low 33 percent (Haffajee, 2023), criminal cases of corruption in the courts[9] (Power News, 2023), and threats of civil unrest (Maeko, 2023). In Mozambique, FRELIMO has managed to avoid scrutiny at various levels of society. The political scenario in the country is characterized by fear and apparent "societal apathy" towards crucial issues. It also means that the ways society deals with significant governance issues may not pressure the ruling elites to deliver public goods, including access to electricity effectively.

Concerning SHS, by looking at the performance of the Top 10 SHS adopters and Mozambique in terms of control of corruption, voice and accountability, and the rule of law, as illustrated in Figure 18, significant inconsistency is notable, which suggests that governance indicators are not sufficient to explain why some countries have embarked in massive adoption of

[9] One of the most pronounced cases is the court case of former CEO of Eskom, Matshela Koko, who is accused in a corruption case (of about USD 116 Million) associated to the construction of a coal power plant (Power News, 2023).

SHS as an alternative solution to grid extension and other countries, like Mozambique, have done so minimally. Precisely, with Rwanda, Mongolia, and India, which scored moderately in the three governance indicators, the remaining countries have performed relatively poorly.

Figure 18 Control of Corruption, Rule of Law, and Voice and Accountability of the Top 10 Adopters of SHS and Mozambique (2021)



Source: Author, based on IRENA (2023), Kaufmann and (Kraay, 2023)

Up to this point, this dissertation has demonstrated that the extant perspectives – economic, socioeconomic, institutional, and political – cannot address some of the puzzles concerning energy poverty in many developing countries – particularly SSA countries. It claims that the issue of low electricity access is complex and requires a more holistic and comprehensive explanatory approach. Besides the need for a holistic approach to understanding the complex issue of energy poverty many developing countries face, some aspects of the political perspective deserve more attention,

such as the nature of state-society relations, particularly aspects of elite's political control and politicization of mechanisms of electricity access distribution.

This dissertation claims that influential politicians influence national utilities to secure large electricity projects that distribute targeted economic benefits to their constituencies, even when that requires utilities to undertake unprofitable projects. The logic is that political pressures on the sector's bureaucracy may result in the implementation of policies that favor the interests of groups to the detriment of the general society. It also claims that the society's attitude towards the ruling elites' performance in deploying essential goods like electricity access can also determine how much attention the state will dedicate to distributing the services effectively.

The case of Mozambique is well suited to explore the role of the elite's political control and society's attitude towards the state's performance in expanding essential public goods like access to electricity. The country's energy sector has been marked by several governance issues, overlapping exercise of mandates, and recurrent political interference, in which the regulator of the sector has so far struggled to act as *de facto* regulator.

The policy implementation has been ineffective in responding to the common interest but somehow effective in favoring the political and economic interests of the ruling elites. Some projects were approved to accommodate the economic and political interests of the ruling elites. One of the most pronounced cases is a long-term and costly Power Purchasing Agreement (PPA) signed between the state utility company, EDM, and an Independent Power Producer (IPP) – Gigawatt, which has the country's former president among its shareholders. The case is elaborated in Chapter 5. Another case refers to the state's reluctance to deploy incentives to expand SHS (e.g., in approving import tax breaks to promote adoption and expansion) to target the most vulnerable segment (the rural, isolated households) while insisting on an unsustainable grid-extension

approach signals contradictions with its "intentions" declared in the policy and regulatory framework. The case is elaborated in Chapter 6.

This dissertation suggests that understanding the mechanisms of the elite's political control, its influence in the distribution of public goods by the state, and the society's stance on the state's performance in the distribution of such essential public goods offers relevant insights to understand the complex puzzle of the energy poverty. That is, while differences in political regime and the levels of political stability of a country (defended by the extant perspectives) cannot fully capture the various outcomes in electricity access distribution among many developing countries, looking at the degree of political control by the ruling elites, the extent of their influence and their intentions in the energy sector, and how the society reacts to the state's performance in the distribution of the services help explain the variations in levels of electricity between countries under same political regimes, similar levels of political stability, institutional effectiveness, levels of economic and economic developments, to mention some.

2.2 Expanding the Political Perspective

This section discusses this dissertation's arguments. First, a debate that helps validate the relevance of looking at the interactions between state and society as a determinant factor of electricity access distribution is presented. Second, the debate that justifies the argument concerning the politicization of the electricity access landscape is presented. Both aspects are discussed in the context of the developing world and Mozambique.

2.2.1 State-Society Relations

The extant literature addressing the state-society aspects of energy developments emphasizes the state's ability to influence events and outcomes – e.g., the distribution of public goods. This dissertation also looks at the state's role; however, it suggests a closer look at the role of society in the electricity access landscape. Looking precisely at citizens' stances in demanding effective distribution of public goods and electricity access is an essential dimension of energy study (Hess, 2018). It can offer relevant insights into how the state responds to these demands. Another aspect to discuss is the elite's political control and politicization of the distribution of electricity access and how it shapes the distribution of public goods, including electricity access.

Looking at the citizens' attitude towards the state, political parties, and politicians in providing public goods opens further avenues to understand the complex system of such a politically and socioeconomically strategic essential service like electricity access. For example, protest is one of the primary tools through which citizens can demand the effective allocation of electricity access when they perceive that the state is at "fault." However, protests can produce various outcomes. García and Farrell (2019) provide an example of a successful attempt at electricity demand through protests by Afro-descendent and indigenous communities in Utria National Park in Colombia – and quote a resident who stated: "*They built the small hydroelectric plant because the community organized and rebelled*." However, this case says little about the state's ability to supply the services to the citizens, which is a relevant aspect. The access coverage in the country has progressed relatively better than in many developing countries – achieving 78.7 percent in total (and 68.6 percent for rural areas) in 2000 and 91.4 percent in total (and 84.5 percent for rural areas) in 2021.

Some academic research also addresses failed attempts to demand an effective allocation of electricity access, particularly in Africa. Hossain et al. (2021) assess the ways and conditions in which social protest over improved delivery of energy services in fragile and conflict-affected contexts benefits the unfavored groups in Africa – and claim that the interactions between government and the citizens are costly, violent, and often do not lead to improved provision of the services. Where protests succeeded, they did not lead to significant accountability mechanisms (Hossain et al., 2021:9). This dissertation claims that in countries like Mozambique – with a long experience of a long-standing repressive regime – protests are less likely to achieve the desired outcomes.

The role of civil society deserves mention when addressing success and failure in citizens' demands for the effective allocation of public goods. While civil society may be able to influence the performance of the state effectively, its advocacy reach can be reduced by laws that constrain such organizations to expand their political reach and their ability to demand effective distribution of electricity access (Gore et al., 2018:4). Most of the extant research contend that the differences can be noted in the variations of the political systems. According to MacLean et al. (2016), democratic regimes are more likely to satisfy public demand than non-democratic regimes. In democracies, citizens' demands are more likely to produce policy reforms than non-democratic systems (MacLean et al., 2016; Gore, 2018). In contrast, in countries with a socialist past – such as Mozambique, Angola, and Tanzania, political elites might want to avoid risking pushback from citizens socialized in a tradition of service provision dominated by the state (Gore et al., 2018:3; MacLean et al., 2016). While this assertion has its merits, some cases challenge the notion. At first look at the three countries' electricity access rates in 2021: Mozambique (31.5%), Tanzania (42.7%), and Angola (48.2%), all below the SSA average for the same period (50.6%) (World Bank, 2023a),

it can be tempting to establish a correlation between socialist past and relatively poor performance in electricity access, particularly in Africa. However, the cases of Egypt, Libya, and Senegal, African countries with socialist past and electricity access rates of 100%, 70.2%, and 68% (World Bank, 2023a), respectively, challenge the view.

A comparison between Ghana and Uganda is an excellent example of how political regime differences may explain the different outcomes in expanding electricity access. Ghana has better electricity coverage (85.9%) than Uganda (42.1%) despite having a similar colonial past and starting point in terms of energy developments (World Bank, 2023a). While Ghana[10] has consistently ranked as one of the best democracies in Africa over many years, Uganda[11] has been described as a country with a long way to go towards democratization (Freedom House, 2023b; Freedom House, 2023a). However, as discussed earlier, some countries considered non-democratic regimes are better off than some countries considered to have democratic regimes.

In settings where political accountability for electricity is weak, the supply of electricity to groups and the deployment of subsidies are used for political advantage, which may be due to weak governance of the sector (Scott & Seth, 2013:11). When accountability between politicians and electricity consumers (citizens) and between politicians and electricity providers is weak, interest groups may be offered opportunities to receive electricity and advantageous tariffs or subsidies (Scott & Seth, 2013:2). However, the role of the degree of accountability can also be understood concerning the degree of elite's political control over the sector. There are multiple examples of countries in Africa with low scores in citizens' voice and accountability yet have performed

[10] The country experience peaceful power transitions since 1992 and has good reputation in civil liberties.
[11] National Resistance Movement (NRM) exercise power through patronage, intimidation, politicized prosecutions of opposition leaders, and the civil society and the media sectors face legal and extralegal harassment and state violence.

relatively well in expanding electricity access, including through SHS – e.g., Egypt, Morocco, Bangladesh, Algeria, Kenya, and Gabon, to mention a few – as discussed earlier.

The nature of the relationship between citizens and politicians defines the degree to which the former holds the latter accountable for the provision of public goods – as where the relationship is not consolidated, expansion of electricity access serves the purpose of securing the support from specific groups, deviation of resources for rent-seeking, prominence on noticeable infrastructure instead of reliability of service, weak regulatory bodies and unproductive resource use (Scott & Seth, 2013:11). In this view, lack of investment in electricity expansion through the grid and low levels of rural coverage may result from rural and remote communities lack of political power and the fact that, generally, the rural areas are not ideal political and economic interests of the ruling elites.

The literature addressing the state-society interactions in Africa often regards these states as incapable of implementing effective policies and, therefore, generally unable to lead social changes. This corroborates the notion that African societies mainly fall into the weak state/strong civil society category (Spalding, 1989:71). On the other hand, state-society relations in SSA are described as pervasive, where the state exploits the resources to benefit a few influential groups to the detriment of the large majority in the society (Kalu, 2017:1-2). One of the pronounced arguments is that state institutions that are resource-extractive, rent-seeking, and clientelist-tolerant either have reduced capacity to implement effective policies or have a certain degree of state capture.

Mechanisms of Rent-seeking and clientelism are often discussed as state-society relations mechanisms that shape the patterns of the distribution of public goods, including access to electricity (Aidt, 2016; Khan, 2000; Medema, 1991; Borowski, 2021; Kalu, 2017; Sovacool, 2013;

Xiaoguang & Heng, 2008; Sotiropoulos, 2023; Lo Bue et al., 2021). For example, as Lo Bue et al. (2021) discuss the relationships between clientelism, public goods, and governance, they argue that an electoral strategy in which political parties offer compensation to citizens who are more likely to vote for them would be more cost-effective than a general provision of public goods. This is corroborated by Robinson and Verdier (2013), who claim that the need for the patron to distribute rents among its supporters selectively creates an inefficient expansion of public goods. However, the extent to which these rent-seeking and clientelist networks constrain the distribution of such services is also subject to the degree of the elite's political control. The bottom-line message is that the more political control there is, the more the rent-seeking and clientelist networks can disrupt the effective and fair allocation of services.

Dawson (2014) describes how the state (in Zanspruit, an informal settlement of Johannesburg, in South Africa) provides public goods based on relational obligations from favors of supporting bases. Another research, by Ọmọbọwale and Olutayọ (2010), assesses the impact of clientelism in rural development in south-western Nigeria, claims that the clientelist benefits allocated to the targeted groups are merely symbolic; therefore, although the clientelist networks allow inflows of projects and goods, the referred areas remain undeveloped. This claim is corroborated by Deuskar (2019), who discusses clientelism and planning in the informal settlements of developing democracies and claims that the benefits from the clientelist arrangements are often inadequate and inequitable.

The general difficulty in arguing rent-seeking and clientelism as the core factors for irregular and low distribution of public goods, including electricity, is the complex mission to provide empirical evidence and the notion that these phenomena can produce positive outcomes regarding the expansion of electricity. Some literature describes the different mechanisms and

outcomes of clientelist networks precisely. Elected politicians can prioritize projects in areas where they enjoy less support to secure re-election – like the case of India (Martínez Arranz et al., 2021). On the other hand, electricity, along with other public goods – roads, education, health – can be used as an exchange coin in clientelist deals, leading to an improvement in the distribution of the service – as one of the most electrified countries in Africa (Dye & Bawakyillenuo, 2022).

Citizens' "failure" to persuade the ruling elites to implement effective policy measures to deploy public goods is, to a significant degree, associated with the degree of the elite's political control. Elite's political control can occur when a restricted group or groups of influential individuals hold significant political power and can decide about the core aspects of the government policies in a country (Ferraz et al., 2022). According to Ferraz et al. (2022), the elite's political control can constrain political competition, allow "bad" governance, and lead to lower and irregular distribution of public goods, including electricity access.

Two implications can be drawn when analyzing the elite's political control and the society's role in the outcomes of the distribution of public goods, particularly electricity access. One possibility is that when citizens perceive that the allocation of public goods is highly dependent on a ruling elite that manages to build long-standing networks of societal control (in social, economic, and political spheres), the most "viable" solution may be to look for locally available low-cost alternatives – like SHS – while expecting for a more stable and reliable connection in the future. This is the case in Mozambique, where many residents, particularly in rural, isolated areas, adhere to SHS products as temporary alternatives while expecting that the public utility electricity company will target their communities with stable and reliable service in the future. Another possibility is that the elite repressive power prevents the citizens from demonstrating their grievances for better allocation of public goods, including access to electricity.

As a reminder, this dissertation adopts the political perspective. It explains the reasons behind the persisting energy poverty in many developing countries – particularly SSA countries – and takes Mozambique as a specific case. It considers that a comprehensive framework that includes all relevant aspects of the extant perspectives – is necessary to address the issue's complexities. However, it adopts a political perspective and unveils additional mechanisms that help explain why some developing countries struggle to tackle the persisting energy poverty while others manage relative success. Unlike the extant explanations, which emphasize the state's role, this dissertation calls for more attention to society's role in the outcomes of electricity access distribution, particularly in SSA countries.

The debate on the nature of state-society relationships as a factor of public goods distribution in Mozambique, particularly electricity access distributions, is not far from the developing world's, especially concerning the SSA region. Essentially, the nature of social contracts, the character of civil society, civic and political participation (particularly protest), rent-seeking, and clientelist networks are frequently addressed in scholarly works. In a paper that discusses how popular protest informs policy and politics in settings where political and civic space are captured or constrained in Mozambique, Nigeria, and Pakistan, Hossain et al. (2021) claimed that citizens in these settings lack formal channels through which they can address their energy grievances. Recent protests in Mozambique's history were precipitated by failure in the negotiations between the government and various associations representing the interest groups interested in demanding policy changes. Three of the most salient examples are the fuel and food protests in Mozambique in 2008, 2010, and 2012, violently repressed by the government which led to insignificant policy changes.

While comparing the outcomes of the “unsuccessful” pretests in Mozambique, Nigeria, and Pakistan with relatively successful protests in Egypt and Senegal, McCulloch (2021) claimed that homogeneity and diverse interests within the groups, as well as the presence of CSOs in Senegal and Egypt, was crucial. If CSOs are considered critical actors in channeling citizens' grievances, what can be said of the possibility of interventive CSOs in Mozambique, especially throughout the rural spaces? The CSOs in Mozambique are essentially dependent on external funding and, in some cases, captured by the state, therefore with limited space for action. As Orre and Rønning (2017:24) claimed, besides aggregating a small number of active associations outside the urban spaces (mainly Maputo), the CSOs’ influence in Mozambique is somehow limited. Apart from challenges related to closed space for political participation, CSOs in Mozambique face sustainability challenges, such as improving the organizations' financial, institutional, and programmatic sustainability, which is among their priorities (AKDN, 2023).

This research argues that the spaces for political participation can be considered limited in Mozambique. Except for urban spaces, mainly Maputo, where a degree of scrutiny of government performance is “tolerated.” Since the country's independence from Portugal’s colonial rule, the ruling party, FRELIMO, has somehow succeeded in building a system that can control most of the social spaces, particularly in the urban and suburban areas. The referred control of social space also includes violent repression of attempts to protest.

Table 1 summarizes some descriptions of the civil and political liberties in Mozambique by five expressive CSOs in Mozambique. Most of these organizations represent an extensive network of CSOs in Mozambique. For example, Joint has about 500 CSOs working in various areas, including democracy, civic space and political participation, human rights, and education, in its network. Their description of closed space for participation is consistent with the government's

tendency on the legal hand. Since 2022, the government has approved new laws establishing tighter control on CSOs in Mozambique. In a significant flip from the previous framework, the government is demanding that all non-profit organizations (NPOs) declare all financial transactions and plan their activities under a degree of direct government supervision.

Table 1 Description of the Civic and Political Space in Mozambique by Selected CSOs

Organization	**Description of the Civil and Political Liberties in Mozambique**
Joint League of CSOs in Mozambique	▪ Protest is not allowed in Mozambique. Journalists, scholars, and CSO activists are constantly silenced. ▪ Electoral violence is recurrent, where opposition parties' supporters are killed and threatened. ▪ Lack of access to information and state entities remains a major societal challenge.
IESE Institute for Social and Economic Studies	▪ Protests are more difficult outside Maputo City and provincial capital cities, as political intolerance, intimidation, and fear are high. ▪ In the context of low literacy levels, lack of access to information, and system of justice, some fundamental civil rights, such as freedom of expression, became privileges of the local "elites" associated with FRELIMO. ▪ The deteriorating democracy in Mozambique is leading to the deterioration of civic space. CSOs are victims of oppression by the government in Mozambique.
Women Observatory of Mozambique	▪ There are structural problems of availability, access, and utilization of public goods in Mozambique, which prevent many citizens, mainly from exercising fundamental rights. It also worsens the social inequalities, particularly between urban and rural spaces.

Organization	Description of the Civil and Political Liberties in Mozambique
CIP Center for Public Integrity of Mozambique	▪ In Mozambique, the ruling powers exert control over the media (public and private). Electoral periods are irrefutable evidence of such control, where FRELIMO primarily benefits from airtime for campaign publicity while blocking other parties from doing so. ▪ Shrinking civic space: Organizations that fight for civil rights in Mozambique, particularly during electoral periods, face risks of reprisals that include blocking the credentials of potential observers and assassination of observers.
IMD Institute for Multiparty Democracy	▪ The civic space is closed in Mozambique, which constrains the effective participation of youth in crucial moments of the country.

Source: Author, based on Source: (Joint, 2018), Pereira et al., 2021) Women Observatory (2021), (CIP, 2023), IMD (2023)

FRELIMO has managed to maintain power to rule with minimal scrutiny from civil society and other political parties – and may be prioritizing deploying essential public goods – like electricity access – where and when it is economically and politically strategic for their leaders. In a qualitative assessment of citizens' electricity and energy experiences in Mozambique's urban areas, Shenga et al. (2022) concluded that the municipalities controlled by FRELIMO enjoy better access to electricity than those controlled by opposition parties. The electricity public utility company – EDM is systematically used as an instrument for economic and political advantage for influential groups associated with the ruling party, FRELIMO.

The elite's political control has produced diverse outcomes in distributing public goods, including access to electricity while hindering the state's efforts to eradicate existing regional,

socio-cultural, and urban-rural divides (Kirshner, Broto and Baptista, 2020) as they produced irregular, inefficient, unfair, and incomplete energy landscapes throughout the country, mainly throughout the rural areas were the citizens' willingness to demand effective allocation of electricity seems lower than in urban areas.

This subsection discussed the complex issue of the low and irregular distribution of electricity access many developing countries face as, to a considerable degree, an outcome of the nature of the interactions between the state and society. It theorized how society's attitude towards the governing elite's performance in distributing public goods can play a significant role in the patterns of the distribution of electricity access. It also touched on allocating public goods, including electricity, as a tool to materialize economic and political interests among the ruling elites. The following subsection discusses the political factors of electricity access distribution while explaining how electricity access is used for political and economic gains.

2.2.2 Political Control and Electricity Distribution

Looking at the politics of electricity access distribution helps capture essential aspects of groups' interests that may significantly impact the sector's policy adoption and implementation. In this research, the perspective helps deconstruct and understand the favoring conditions and mechanisms through which the ruling elites use electricity access to advance their economic and political interests to the detriment of the common good, and this, ultimately, plays a role in the issue of the law electricity access many developing countries face.

The first aspect to address here is the monopoly in the electricity grid, which opens opportunities for the creation of rent-seeking networks and can lead to inefficient services, underinvestment, and poor infrastructure maintenance (Scott & Seth, 2013:2). The monopolistic

nature of electricity distribution may have specific political and accountability implications – as it can contribute to dependency on a single provider. Therefore, the users cannot show dissatisfaction or drive down incentives for service improvements (Scott & Seth, 2013:8). The existence of the monopoly in electricity distribution allows political interests to resist the need for reforms (Scott & Seth, 2013:9). As Holburn et al. (2002) point out, politicians and interest groups will be alert about utility pricing in most utility monopolistic scenarios. However, as mentioned earlier, the possibilities and the degree of influence are also subject to the degree of political control and the society's stance.

The second aspect to address is high electricity demand and consumers' expectations of the service provision by a specific provider. This research claims that where electricity access is seen as a crucial resource for "socioeconomic well-being, diverse political interests may manifest to maximize the condition to favor the interests of groups. According to Scott and Seth (2013:2), high electricity demand gives the service political salience that can be revealed in promises and arrangements by politicians in pursuit of electoral support of groups. In some cases, patterns of supply and pricing (electricity tariffs) have more attention from politicians than the effective and fair distribution of electricity access. For example, in India, many politicians get support by allocating free or hugely subsidized electricity to citizens, which tends to increase during the years before elections, and electricity theft in the country is overlooked by the government over concerns about losing votes (Scott & Seth, 2013:12).

As the motivations to exercise control over the mechanisms of electricity access vary, this dissertation's argument concentrates on the control mechanisms that may result in unfair distribution of electricity access while benefiting the elite's economic and political interests. According to Scott & Seth (2013:8), such control may occur in the form of licensing and approval

of non-feasible projects, unfavorable power purchasing agreements (PPA) with the private sector, and the use of state utilities for political and electoral agendas (Scott & Seth, 2013:8).

Energy transition seems irreversible, judging by the current achievements and future projections in all world regions. Although grid expansion remains a leading goal for many governments in developing countries, it faces low electricity demand in many rural areas, as remoteness makes it unsustainable to target many households. Most benefits of improved living can be attained today through renewable solutions, like solar installations (George et al., 2019:26).

Their adoption has a mix of expectations and contradictions concerning the popularization of off-grid solutions like SHS. While solutions like SHS represent a practical and cost-effective solution, their introduction in some contexts where electricity distribution is significantly politically controlled can upset the business and politics as usual. Taking India as an example, as Balls and Fischer (2019) statetd, the introduction of solar microgrids upset and reshaped practices of electoral politics and citizens' demand for electricity (Balls and Fischer, 2019).

Successful implementation of SHS depends on state intervention. Expanding SHS may be difficult where the state has no interest. Thus, concrete subsidies and fiscal incentives are crucial for its expansion. As noted by Eras-Almeida et al. (2019) in a paper that addresses the lessons from rural electrification through SHS in Peru, Mexico, and Bolivia, connecting local government incentives allows projects to achieve broad population participation, and thanks to the political support the projects have built trust in communities to ensure their execution and durability. The case of Bolivia, however, where the development of SHS, as part of the whole rural electrification strategy, dealt with under the jurisdiction of municipalities Eras-Almeida et al. (2019), suggests that the decentralization has allowed the expansion of the SHS market, while decentralization is

still a significant challenge for the energy sector, particularly in most post-colonial developing countries.

Schelly (2015) explores users' perceptions of the political elements of adopting SHS across Wisconsin in the United States. According to the paper, solar energy technology interacts with the politics of environmentalism, confronts the "politics-as-usual," and can pave the way for decentralization and redistribution of wealth. Thus, it would be fair to assert that political authority is markedly patrimonialistic – rent-seeking and clientelist friendly – like in many post-colonial SSA African countries, promoting SHS may open opportunities for resources redistribution and political advantage – associated with the supply of electricity – outside the ruling circle.

How does using electricity distribution for groups' economic and political benefits result in low access? According to Sackeyfio (2018), heavy state intervention in the regulatory environment has been pointed out as a factor for poor investment in the energy sector. As some of the interventions commonly include politically motivated subsidies on electricity consumption, it may result in a significant loss of funds by electricity utilities, impacting their ability to expand the allocation of their services (Scott & Seth, 2013:12).

Like the debate on state-society factors of electricity access distribution, most of the fixtures highlighted in the discussion about the political aspects of electricity access in the developing world apply to Mozambique, where systematic political interference in bureaucratic processes in favor of powerful groups is a common practice. Mozambique's energy sector's policy priorities have been heavily influenced by the elite's political and economic interests. While some scholarly works have addressed the issue of political influence in the energy sector (Cotton, Kirshner, and Salite 2019; Nhamire and Mosca 2014; Salite, Cotton, and Kirshner 2020; Power

and Kirshner 2019; Ahlborg and Hammar 2014), there is still a green field to explore the society's stance.

As Salite et al. (2021) discussed, the state's ability to implement relevant sectoral reforms to develop the electricity system is constrained by recurrent politicization of the public utility, tariff decisions, and the regulatory body. This claim is corroborated by Nhamire and Mosca (2014), who argue that the politicization of the national grid utility (EDM) prevents the company from modernizing its systems while forcing the state to allocate financial resources to buy back the country's electricity exported to South Africa.

As electricity is strategically crucial for socio-economic development, constant promises of affordable electricity may help the state preserve the symbolic link of the citizens. According to Power and Kirshner (2019:1), the allocation of electricity symbolizes the state's social responsibility and a tool to gain legitimacy. As the ruling party uses the sector for political propaganda, the participation of the private sector is constrained (Salite, Cotton, & Kirshner, 2020:2. Ahlborg and Hammar (2014:122) claim that the Government's lack of support to the private sector tends to be a choice of making the electricity public utility company (EDM) a tool to gain public support.

Similar to many post-colonial countries, FRELIMO managed to establish a robust apparatus of pollical intervention since the post-colonial transition. The process of privatization that followed the independence allowed the elites to accumulate wealth, which allowed them to build a strong intervention capacity (Power and Kirshner, 2019: 500-509).

The centralized management of the energy sector serves as a tool to impede wealth accumulation outside the "ruling club" and constrain political opposition (Power and Kirshner, 2019). The question worth asking is: how does the political control and the politicization of the

energy sector translate into infective distribution of electricity, and has this been impacting society's ability to demand an effective allocation of electricity?

This dissertation claims that the elite's influence in the energy sector – referred to above – materializes amidst a long-standing repressive and inefficient ruling by successive FRELIMO governments that have been successfully preventing the society from addressing their grievances on the state's infective allocation of public goods freely. The society's inability to demand more open space for political participation and, mainly, the inability to pressure the elites to allocate essential services effectively is a perfect scenario for continuing the "culture" of using the state's resources to materialize particular economic and political interests. This may explain why the government has been apathetic to the effective participation of the private sector in the distribution of electricity access and has been resisting the growing pressure for the decentralization of electricity distribution solutions – e.g., by promoting the SHS segment.

The state in Mozambique seems willing to rely on EDM and FUNAE to materialize the challenging mission of universal access to electricity. Meanwhile, the private sector could play a vital role in off-setting the state's inefficiencies. While the reason for such a stance has not been publicly addressed, this dissertation infers that the ruling elites seem eager to exercise strict control over the electricity supply chain, which may be a manifestation of the referred elite's political control in the sector.

According to a market study by Gogla (2021), the so-proclaimed accessible solution (the SHS) remains costly for low-income rural households (Gogla, 2021) as the market is solely dependent on imported products. Furthermore, without reductions in import duties and Value-Added Tax (VAT), the fiscal burden on the importation of SHSs represents about 45 percent of the

cost, which is transferred to the end-users, mostly the low-income rural households (Hodgkinson and Smeshko, 2021).

Essentially, this chapter did three things. First, it presented the analytical framework of the research by justifying the need for considering a more compressive approach to address the complexities of the issue of energy poverty – by highlighting the merits and shortcomings of the extant perspectives (economic, socioeconomic, institutional, and political perspectives). Second, it justified the expansion of the political perspective of the low electricity access distribution in the developing world. It did so by suggesting a new explanatory route based on a framework that combines the roles of the elite's political control and society's stance concerning the ineffective distribution of electricity access. It demonstrated how this dissertation demarcates itself from the extant research. Third, the chapter discussed relevant literature on the political factors of electricity access expansion in the developing world, mainly research addressing the issue in all developing regions, mainly the SSA region.

The whole discussion in the section was based on the claim that the elite's political control also plays a significant role in the mechanisms of electricity distribution. The degree of state involvement in the process of allocation of the service – especially in countries where the political organization is markedly patrimonialistic – is, to a significant degree, subject to the ruling elite's political and economic interests. Furthermore, society's attitude towards the state's performance in deploying such services can determine the degree of attention the ruling elites will give to citizens' energy needs.

Most of the discussion in analysis Chapters 5 and 6 are based on these arguments, as the discussion considers mainly the citizen's stance towards the state's performance in the distribution of electricity access. The discussion in Chapter 6 mainly covers the role of elite's political control

over the mechanisms of electricity distribution and its influence on the state's stance toward promoting SHS as a practical and cost-effective alternative to grid expansion.

CHAPTER 3 – Electricity Access: Developing World and Mozambique

This chapter provides background and context information about electricity developments in the developing world, particularly concerning electricity access, the trends in off-grid solutions, and aspects of sector governance. First, the trend in the development of the energy sector in the developing world is presented while touching on the political features of their development. Second, Mozambique's context is presented, highlighting the country's political and economic context, state-society relations, and the developments in grid and off-grid sectors.

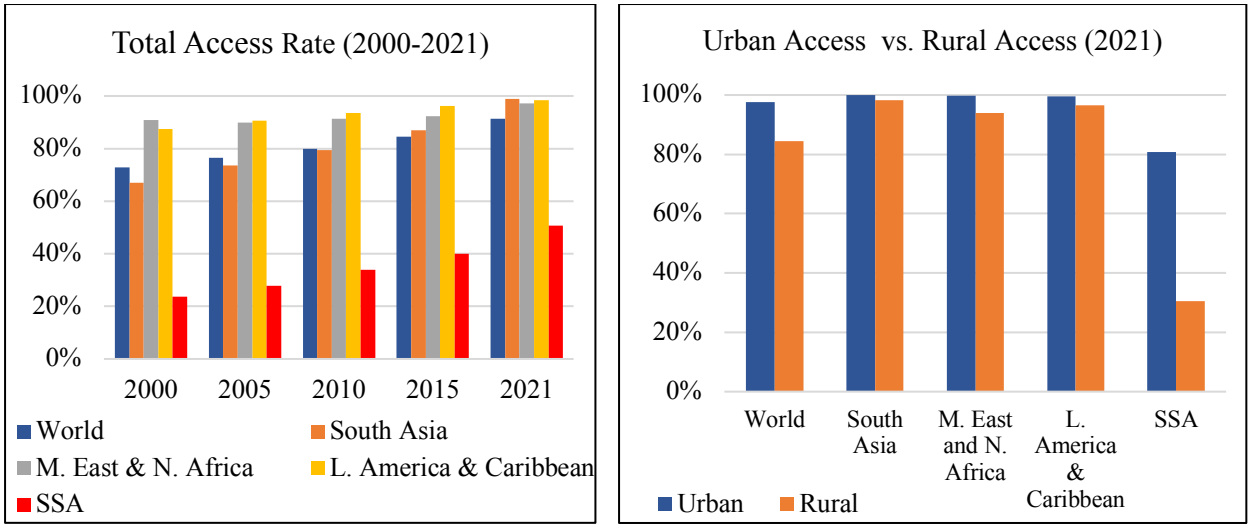
3.1 Developing World

As the research's core concern involves state-society relations and political economy factors behind the persisting energy poverty in the developing world, this chapter tries to make sense of how, despite decades of concerted agendas and reforms in the energy sector to tackle the persisting energy poverty, countries in the developed world have produced diverse outcomes – as some regions are better off than others in terms of electricity access rates.

Despite significant policy and institutional reforms to target the Sustainable Development Goal (SDG) of universal access to modern energy by 2030 (SDG #7), nearly 2.3 billion people rely on traditional fuels and technology – that are highly polluting – for cooking (World Bank, 2023c). As illustrated in Figure 19, despite the growing tendency in all the developing regions, electricity access in SSA is still significantly low compared to other regions. While the other regions managed to target at least 95 percent of their population on average in 2021, SSA still lags with 51 percent. Furthermore, the SSA region holds the worst urban/rural electricity access ratio compared to the

other developing regions in 2021. In 2021, the region recorded about 81/30 percent for urban and rural areas, against a world ratio of about 98/85 percent, respectively, for urban and rural areas.

Figure 19 Electricity Access as Percentage of Population by Developing Region



Source: Author, based on (World Bank, 2023b, 2023a)

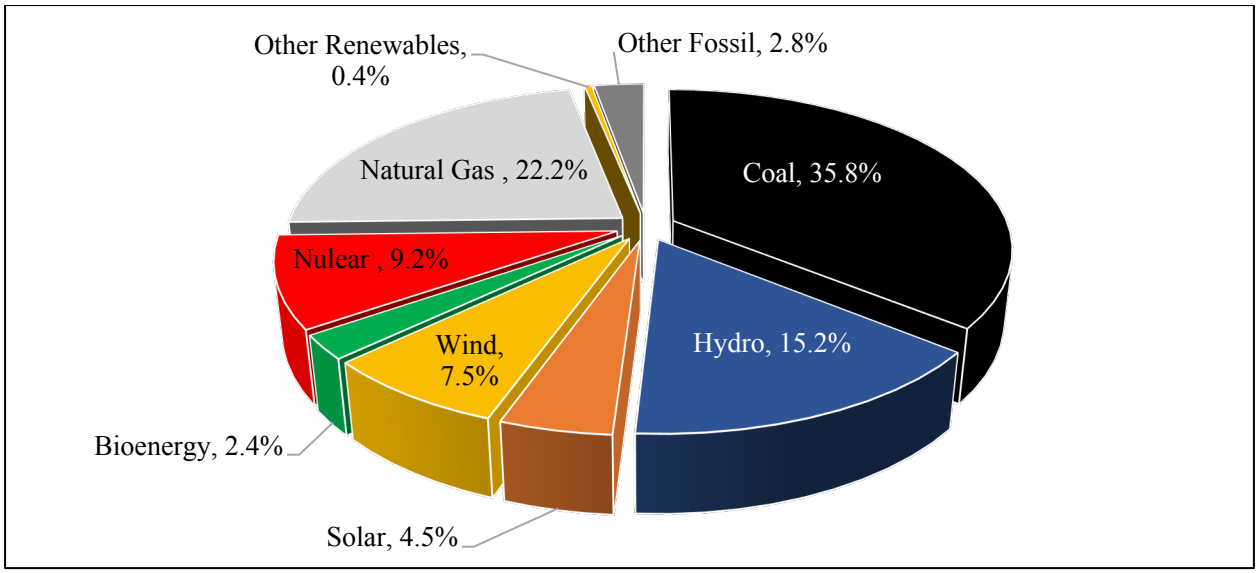
Despite Africa's enormous energy potential, including fossil fuels and renewables, the SSA region lags behind other regions. However, the investment in energy infrastructure has evolved slowly. According to Ramalope et al. (2022), between 2010 and 2020, the region invested about 1.7 percent of the total investment volume globally, and to achieve universal access, the region will need to triple the growth. However, the issue of electricity access in SSA is not limited to investment capacity and affordability. Reliability is also a significant concern, with many countries experiencing systematic power cuts daily due to grid-related issues, which force most of the population to rely on polluting alternative generators – such as diesel generators (Climate Analytics, 2022).

Massive expectations developed over the potential of decentralized solutions – like SHS – to complement grid extension to expand electricity access, especially throughout rural, isolated areas in the developing world. Although a few countries managed to advance significantly rural electrification through SHS – notably Bangladesh, India, Kenya, and Tanzania – (Wagner et al., 2021; Hellqvist and Heubaum, 2023) in other countries where at state-level concrete efforts to promote this solution are yet to be seen, the levels of maximization remain far from the potential, as regional disparities, including urban-rural areas, remain high.

Although decentralized solutions to electricity access are (written) priorities in the current policy framework, concrete measures (e.g., fiscal incentives) are yet to be implemented. Meanwhile, SHS's potential to help reduce the electricity access gap between urban/rural remains untapped. As Ansari et al. (2013) addressed the development of solar energy solutions in India, a lack of political commitment and, consequently, inadequate government policy severely impact the implementation of solar energy initiatives. Furthermore, the paper compares India and China to conclude that the success of solar energy in China is significantly fueled by political commitment.

A global agenda seeking to reduce greenhouse emissions has driven policy efforts to solve energy poverty through decentralized Renewable Energy Technologies (RETs). Most promising decentralized RETs include off-grid mini and micro-hydro, wind, and a diverse range of solar systems. While coal dominates the production mix and hydropower among renewables, as Figure 20 illustrates, solar-based solutions, including SHS, are the most promising options predicted to grow fast.

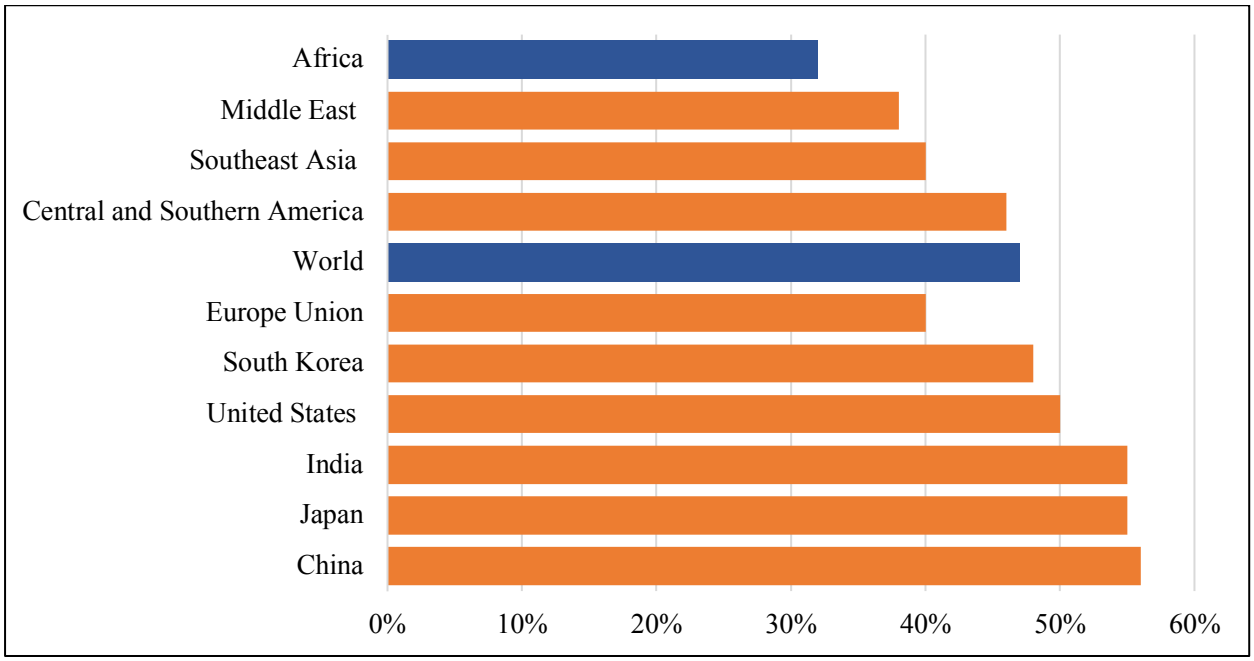
Figure 20 Distribution of Global Electricity Production by Source of Energy (2022)



Source: Author, based on Statista (2023)

According to a report by the International Energy Agency (IEA), renewables are expected to overtake fossil fuels as the primary source of electricity production by 2030 (IEA, 2022). According to the same report, Solar PV and Wind are predicted to add the largest share of the 60 percent projected by 2030 and the largest share in all new capacities (75 to 80%) additions by 2050. Figure 21 illustrates the projection of Solar PV share in adding new electricity capacities of major global players and developing regions, including a prediction of a significant 32 percent addition of Solar PV for Africa against the world's 47 percent.

Figure 21 Solar PV Share of Global Electricity Capacity New Additions (2022-2050)



Source: Author, based on IEA (2022)

Decentralizing the initiatives for electricity access expansion sounds like a desirable way forward; However, there are many challenges associated with it that would require state intervention through market-stimulating policies. According to Zhang et al. (2020), resources like public finances, for example, can help stimulate decentralized investments, specifically in the initial stages.

As Zhang et al. (2020) put it, adopting clear national targets and guidance for deploying renewable solutions, like Solar PV installations, is the most significant incentive for most developing countries. One would ask how objectively coherent policies – on renewable and decentralized solutions for electricity access – can be adopted and effective measures implemented if they arguably constitute an (outsider) international agenda imposed on governments in the

developing world. Various debates erupted concerning the fairness of the energy transition agenda and its technological costs that are not within the reach of many developing countries. A more extreme set of opinions suggests that the agenda represents a mere "symbolic" commitment adopted in exchange for the "much-needed" financial aid by Western countries and development agencies.

Among various solar energy solutions, SHS emerged as a relatively effective solution to alleviate energy poverty – complementing grid extension, especially in the developing world. Recent technological progress – resulting in price fall – and the fact that the solution is not subject to market price oscillations and uncertainties like fossil fuels sources (Baruah and Coleman, 2019; Zubi, Fracastoro, Lujano-Rojas, Bakari, and Andrews, 2019; George et al., 2019) positions solar energy solutions, SHS in particular, as the adequate answer to the persisting energy poverty. The solution (SHS) provides a single household with basic energy amenities such as lighting, power TV and radio, fan, and mobile charging. A standard SHS kit includes a Solar PV generator (a PV panel), a charge controller, and a battery (Manchanda, 2017). SHS has seen rapid growth and has proven to be an effective source of electricity access for households due to its capability to target remote users who do not have access to grid systems (Kizilcec & Parikh, 2020).

The introduction of the payment mechanism Pay-As-You-Go (PAYG) helped spread SHS in many developing countries. PAYG is a model that uses a Global System for Mobile (GSM) and a software platform that integrates mobile money platforms to monitor the solar system remotely (Adwek et al., 2020). Solar companies rent end-user consumers an SHS kit comprising a solar PV panel, a charge controller, a battery, a mobile charger, and LED bulbs.

Basic SHSs have sufficient power for lighting and charging phones, while larger systems can power appliances like TVs and radios. The solutions allows low-income customers to make

payments in small amounts on a daily, weekly, or monthly basis through a mobile phone, paying for the energy they use (Adwek et al., 2020). The households can own the kit gradually. The model also offers user training, ongoing maintenance, and service-blocking functionality that minimizes investment risk (Yadav et al., 2019).

As stressed earlier, state intervention is instrumental in determining the adoption and expansion of new technologies to satisfy one of the highly politically strategic segments of public goods distribution (the energy sector). The relative success of the aforementioned developing countries in expanding rural electrification, primarily through SHSs, is commonly attributed to states embracing various initiatives such as allowing private participation, financial and fiscal incentives, partnerships with development agencies, and financial mechanisms such as PAYG.

The milestone in Bangladesh, for example, is mainly attributed to the synergies between the public, private sector, and international development agencies (Cabral et al., 2021). The government's subsidies and grants, combined with microcredit schemes through public-private partnerships, allowed SHS to expand rapidly throughout the country (Hellqvist and Heubaum, 2023)

According to Fraye (2022), India has achieved significant milestones in solar energy investments due to a massive campaign by the government. For example, to boost solar rooftop energy in the country, the government has set up a web portal where end-users interested in installing solar panels can register for government subsidies (Frayer, 2022). The author highlights that China also used the strategy to increase the competitiveness of its solar energy sector.

In Kenya, the government implemented waivers on VAT and tariffs on solar photovoltaic (PV) products, which were combined with other development actors' support (Wagner et al. 2021). The strategies adopted to expand SHS involved Setting targets, among other measures, significant

incentives, and a supportive market system for Solar PV solutions (Bernal-Agustín and Dufo-Lopez, 2009; Adwek et al., 2020). The government deployed tax exemptions to boost investment in the energy sector, which positioned the country as a significant example of a market-based approach toward rural households' energy supply (George et al., 2019:132-134), which allowed the country to be the pioneer of the PAYG solution (Yadav, Heynen and Palit, 2019).

Despite the abovementioned achievements in adopting SHS, more ambitious measures by states will be necessary for SHS solutions to meet its potential. These are steps towards allowing SHS to play a significant role in expanding electricity access in the development process. SSA governments are still expected to implement more reforms to decentralize the solutions for faster coverage of electricity access. While referring to the Tanzanian case, Ferrall et al. (2021) pointed out that the lack of political support for the SHS segment has caused the country's national utility (Tanesco) to fail to maximize various available funding opportunities.

SHS is a costly alternative for many low-income households without state intervention. For example, as EnergyPedia (2022) estimated, a typical SHS cost in Eastern Africa is around USD 170 for a 12-watt-pico (Wp) system and USD 2,000 for a 150-watt system. In contrast, in developed countries, the average installation cost of SHS per watt is between USD 6.60 for a residential-sized system, which is about US$ 6.50 to US$ 7.50, including panels, inverters, mounts, and electrical items.

3.2 Mozambique: State-Society Relations and Electricity Distribution

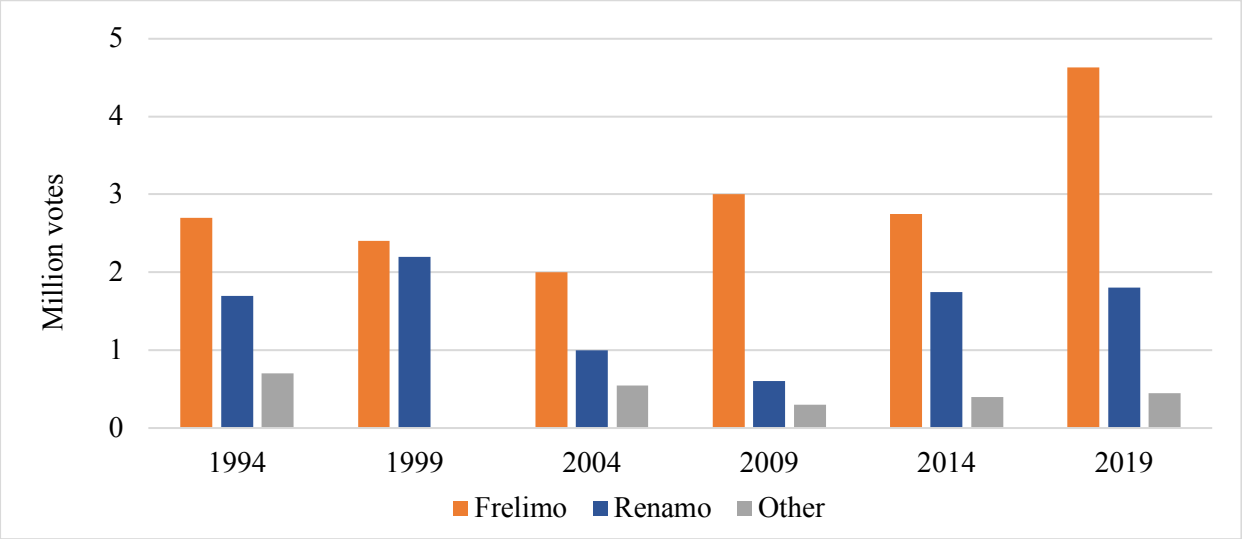
This section describes the electricity sector situation in Mozambique. First, it describes the country's political situation in the post-colonial period to explain the nature of state-society relations – a necessary step to understand the mechanisms of the distribution of public goods in the

country and how the state and society have attempted to influence these processes. Second, it presents the country's electricity system while concentrating on describing the governance system – including the explanation of the agency and the policy and regulatory frameworks – and the market side – including the description of electricity, its potential, production capacity, and electricity access distribution.

3.2.1 The Nature of State-Society Relations

Mozambique is a low-income country, with about 63.5 percent of its estimated 31.6 million population living below the poverty line, mostly in rural areas (Census, 2023; INE, 2023). The ruling party, FRELIMO, has been in power since the country's independence in 1975. It won six contested general elections. Figure 22 shows FRELIMO's expressive triumph against the opposition parties, especially since 2009.

Figure 22 Number of Votes in Presidential Elections in Mozambique (1994-2019)



Source: Adapted from Hanlon (2021)

FRELIMO adopted Marxism-Leninism as its official ideology immediately after replacing the colonial government. The regime did not last, as the country embraced the market economy in the early ‘80s. The shift was followed by a gigantic privatization of the economy, which allowed FRELIMO'S prominent figures to become the new “capitalists” of the country. Also, FRELIMO has made the state the champion of the supply of strategic social services, including electricity. As pointed out by Sumich (2010:679), FRELIMO has become a privileged channel through the democratization process, one of the most significant channels through which many demands are negotiated.

When FRELIMO became the state, new leaders maintained some aspects of the state structure while attempting to introduce some urgent reforms (Alexander, 1997). One of the radical changes FRELIME tried to implement was to organize the society in “communal villages” in rural spaces inspired by the “African socialism” of Julius Nyerere’s Tanzania, as the intention was to gather the dispersed rural communities by engaging them into large farms and cooperatives. The new leaders attempted to eradicate the local, traditional authorities and traditional practices like rites FRELIMO. However, they received significant resistance from many communities that used to live dispersed throughout the country (Chichava, 2013. Communal villages ended up failing, to a significant extent, due to a lack of state capacity (Alexander, 1997).

The armed conflict that erupted two years after the country’s independence (1977), opposing the FRELIMO government and the guerrilla movement Mozambican National Resistance (In Portuguese *Resistencia Nacional de Moçambicana* – RENAMO), also represented a form of contestation of the “new authoritarian regime.” However, RENAMO is also said to be a creation from the minority white regime in South Africa and former South Rhodesia (Zimbabwe) as an

instrument of sabotage of the FRELIMO government due to its intention to advance a socialist agenda in the region. To some extent, the 16-year civil war was considered a proxy war between the Soviet Union and the United States (US) (Mamodu, 2018).

Civil society activity in the "new Mozambique" started with associations to contest the Portuguese colonial rule, primarily influenced by the international context. Pan-Africanist and Negritude ideals and revolutionary socialism inspired the revolutionary movements in Mozambique (Francisco et al., 2007). During the state-party ruling period (1975-1992), FRELIMO's women and youth leagues acted as civil society organizations (CSOs) that represented the interests of the whole Mozambican society (Francisco et al., 2007).

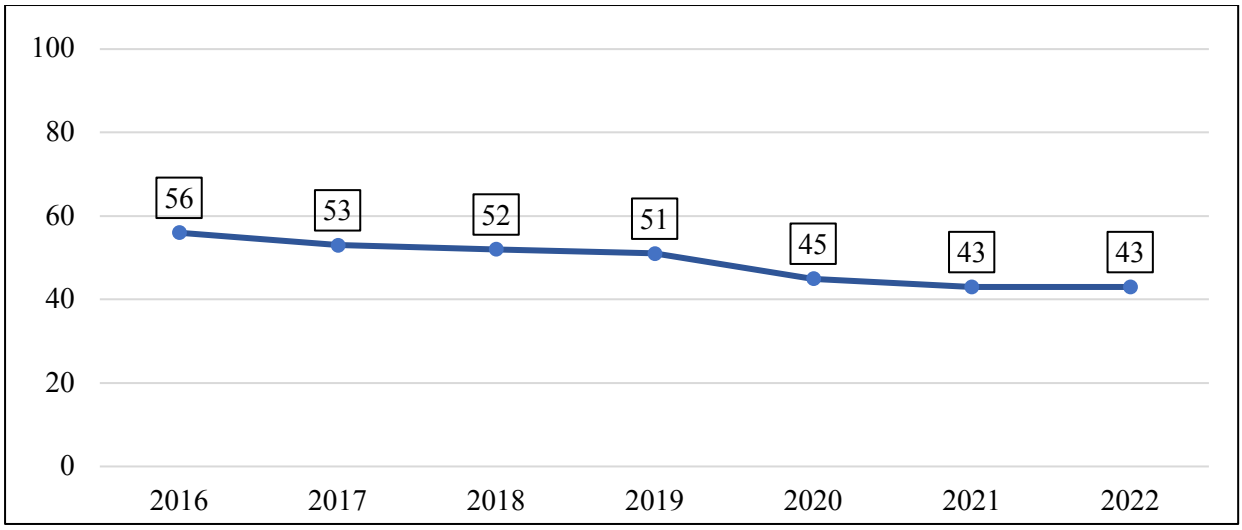
Only after the first multiparty elections held in 1994 did the country witness the emergence of more civil society actors (international and domestic). Before the '90s, there were no favorable historical conditions for private entities to express themselves freely – on the verge of the multiparty elections of 1994, with significant political changes, CSO started a new era of participation (Homerin, 2005)

Currently, Mozambique has about 5 thousand operating in Mozambique in 2018 (Joint, 2018); however, effective participation remains a significant challenge. As reported by Joint (2023), there are 435 international and 200 domestic CSOs (registered with Joint) [12] working in Mozambique, mainly in the areas related to health and gender, education, social protection, agriculture, democracy and good governance, environment, human right, and justice, assistance to civil society organizations, religion, sports, tourism.

[12] Joint is an CSO established in 2007 with the mission of strengthening the CSOs in Mozambique and improve the collective actions between CSOs and improve dialogue with the government and the public sector (Joint, 2023).

Despite the growing number of organizations, CSOs face challenges related to the country's low levels of democracy, freedom of speech, difficulty accessing information, co-option of CSOs, corruption, and unfair allocation of resources, among other traits are common in the country (Macangira, 2016). Mozambique's Freedom in the World Index scores have been partially free; However, the last seven years have been worsening, as shown in Figure 23.

Figure 23 Mozambique Score of Freedom Index (2016-2022)



Source: Author, based on Freedom House (2023b)

Historically, there is no record of significant events in which CSOs influenced deep reforms in the country. However, three cases suggest that CSOs can influence essential processes in the country under specific conditions – such as in situations with significant international ramifications. While the three CSOs involved in the cases "failed" to mobilize many citizens to protest in the streets, they succeeded in mobilizing external support to influence the process.

The first case concerns the role of the Public Integrity Center (in Portuguese *Centro de Integridade Pública* – CIP) in exposing the biggest corruption scandal – the "2 USD billion hidden

debt" of 2013. CIP oversees the performance of the Government of Mozambique. It exposed encounters of the case in the public eye and played a significant role in pressuring the attorney general to criminally accuse the beneficiaries of the "stolen" funds in 2021. It exposed the case domestically and sought international support to hold the government accountable. The case was trialed in 2021, and important political figures and state officials were sentenced to jail time. CIP helped expose the biggest corruption scandal – the "2 USD billion hidden debt" of 2013. CIP tried promoting various street demonstrations, which the government repressed. However, it used various resources, including its connections with European embassies, like the Swedish embassy, to promote nationwide debates. CIP launched a campaign popularly known as "I will not pay this debt" ("*Eu não pago essa dívida" in Portuguese)* to pressure the Government to cancel the debt contract with the creditors. The case went on trial in 2021, which resulted in the conviction of all the executors of the fraud and the beneficiaries. However, many voices indicate that the trial was a mere diversion strategy to secure financial aid flow that stopped due to the scandal. The former president and the current president (minister at the time of the scandal) were mentioned several times during the trial as direct beneficiaries of the corrupt funds; however, they have no legal implications for the case.

The second case concerns the role of the Budget Monitoring Forum (in Portuguese *Forum de Monitoria do Orçamento* – FMO), a group of CSOs inclined to scrutinize the allocation and influencing public financial expenditure policies, in cooperating with CSOs based in South Africa to guarantee the extradition of the former Minister of Finance of Mozambique to the United States of America (USA) to be trialed on the "2 USD billion hidden debt" case. FMO appealed and reverted a South African court decision to extradite a former Mozambican minister of finance (Manuel Chang) to Mozambique in connection with the "2 USD billion hidden debt". South Africa

detained Manuel Chang in response to an arrest warrant issued by the United States (US). The US wants to trial Manuel Chang because part of the USD 2 billion loan given to Mozambican entities belongs to US investors, and the transactions were carried out in US currency. As Manuel Chang was finally extradited to the US and awaits trial, this represents a significant setback to the current administration, given that a possible trial of the former minister of finance in the US may open a new page to the case with the possible revelation of further details of the cases, including the disclosure of names of beneficiaries of the stolen funds among former and current state officials.

The third case concerns the role of the National Peasant Union (in Portuguese *União Nacional dos Camponenses* – UNAC) – a SCO acting in the protection of the interests and the rights of small-scale farmers in Mozambique. in the failure of the triparty (Mozambique, Brazil, and Japan) food production project, ProSavana that involved three governments: Mozambique, Brazil, and Japan. UNAC allegedly fought against the project to protect small-scale farmers over fear of land-grabbing. While the project started as one of the most significant food production projects globally in 2009, it received several backlashes as it was seen by many as a large-scale land-grabbing deal (Funada-Classen, 2019; Mosca, 2014; Wise, 2014). UNAC described the project's decision-making process as non-inclusive and non-transparent (Mosca, 2014), and it started a massive campaign (internally and externally) to stop the project. Many CSOs in Japan and Brazil joined the campaigns (Grain, 2020; Shankland et al., 2016; Bussotti & Nhaueleque, 2022), leading to its official abandonment in July 2020 (Grain, 2020). Concerning the legal framework, there are, essentially, three instruments that regulate CSO activities in Mozambique:

(I) Law 8/91 of 18 June (1991) establishes the principles and rules that regulate the right of free association of all NPOs.

(II) Law 8/91 of 18 June (1991) establishes the scope of exercising the right of freedom of assembly demonstration. Article 10 regulates the procedures for demonstrations, including the requirement of pre-notice and paperwork that includes proper identification of the proponents.

(III) Decree 55/98 of 13 October (1998) defines the criteria, authorization, objectives, and mechanisms of the functioning of foreign non-governmental organizations (NGOs). The decree defines an NGO as "an NPO involved in emergency, rehabilitation, or development."

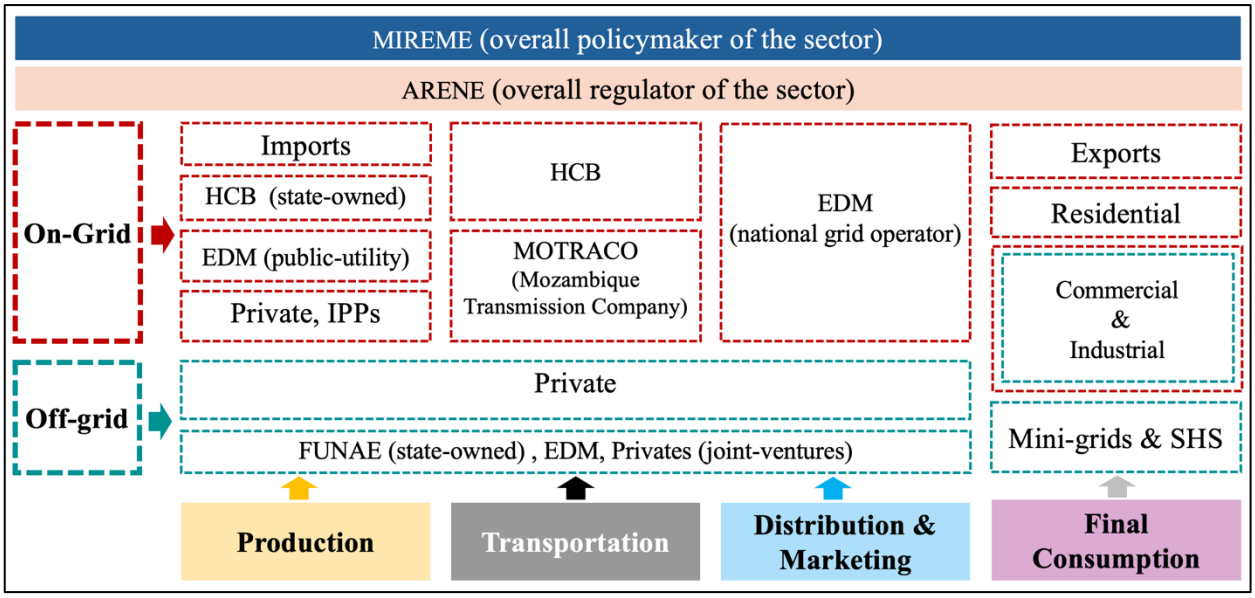
In addition to the existing framework, in 2022, following a proposal by the government, the parliament approved a law (Law 11/2022 of 7 July 2022) on the prevention of money laundering and terrorism. This instrument addresses many aspects related to the functioning of NPOs. It dedicates a separate article (Article 59) to regulating the financial resources received or transferred by any NPO working in Mozambique. As the Article states, any transfer received by any NPO must be declared before the Government's competent body, and they must submit financial statements to the government every year. This instrument marks a significant legal shift to the current regime that regulates CSO's activities in the country.

Also, in 2022, the Council of Ministers of Mozambique approved a law proposal on NPOs which intends to revoke the Law 8/91 of 18 June (1991) of the right of associations and the Decree 55/98 of 13 October (1998) on foreign NGOs. The proposal intends to bring profound changes to the functioning of the CSOs in Mozambique. Establishes substantial change on the bureaucratic hand by introducing the obligatoriness of all NPOs to submit an activity report to the government – as those organizations that will not comply will revoke the permit to act in Mozambique. Also, it requires that a designated government entity coordinate the organization's activities.

3.2.2 The Electricity System

This subsection describes the paradoxical nature of the electricity system in Mozambique by describing how, despite being endowed with massive energy and natural resources, the country has not been able to build a stable electricity system. It touches on relevant historical and political accounts of the country's electricity system. It also presents statistics that picture the divides in the distribution of electricity access across the country's regions. Figure 24 illustrates the complete picture of the electricity system in Mozambique from production to final electricity consumption.

Figure 24 Structure of the Electricity Sector in Mozambique



Source: Author, based on ALER (2022), EDM (2023), HCB (2023)

The Ministry of Mineral Resources and Energy (MIREME), the sector's overall policymaker, EDM, the public utility, and the Energy Fund (*Fundo de Energia* in Portuguese – FUNAE*)* are the most prominent players in the sector, while the regulator of the sector (ARENE, *Autoridade Reguladora de Energia* in Portuguese) is yet to act as the regulator *de facto*. On the

market side, EDM is the sole operator of the national grid and the major off-taker of the generated electricity by the state-owned Hydroelectric Cahora Bassa (*Hidroeléctrica de Cahora Bassa* in Portuguese – HCB). FUNAE dominates the energy supply in rural areas. The three state-controlled entities are responsible for about 77 percent of the electricity supplied on and off-grid (ALER, 2022).

Amid the difficulties in modernizing the country's electricity grid system and dependency on international development partners, the Government of Mozambique has implemented several reforms in the sector to address people's needs. The year 2009 marks the beginning of a new cycle of reforms with the enactment of policy instruments, including laws and decrees, strategies, and master plans, as well as institutional restructuring at the ministerial level, EDM, ARENE, and FUNAE. The referred policy documents announce ambitious goals, prioritize the off-grid sector for rural electrification, and place the private sector as a strategic partner to advance the state's ambition to achieve universal access by 2030.

The relevant policy and regulatory framework for expanding access to electricity in Mozambique are briefly described in Table 2. Various instruments state ambitious goals – particularly the state's "commitment" to creating an enabling environment for further sector decentralization. Among the echoed aspects in various instruments is the emphasis on promoting renewable energy and creating an enabling environment to attract private investments through specific fiscal and financial incentives to expand access, especially throughout rural areas. However, most of the announced measures remain "poorly" implemented and, in other cases, completely unimplemented. Since the enactment of important legal, regulatory, and policy instruments – in 2009 – that announced a new "era" in the energy sector in Mozambique, the private sector has remained little influential. The incentives to decentralized solutions remain a "mirage,"

EDM and FUNAE's influence remain unmatched in the distribution of electricity countrywide, and the national electricity access rate has remained relatively low – around 40 percent of the total population.

Table 2 Electricity Policy and Regulatory Framework

Instrument	**Legal Basis**	**Manifest on Electricity Access**
Electricity Law (1997)	Law 21/97 of 1 October	Represents the first attempt to adopt a specific fiscal regime and incentive package for electricity investments. It was revoked by the new electricity law (12/2022 of 11 June).
Energy Strategy (2009)	Resolution 10/2009 of 4 June	Announces the Government's intention to promote RE (localities and administrative posts) through renewables (solar, hydro, and wind) and exempt all RE projects from fiscal obligations – the Income Tax (IRPS) and the VAT.
Renewable Energy Policy (2009)	Resolution 62/2009 Of 14 October	Promotes public and private investment in expanding renewable energy. Provision of financial (budget allocation, low-interest loans, loan guarantees, and subsidies) and fiscal (reduction of VAT and import duties for solar and wind equipment) incentives for the private sector.
Renewable Energy Strategy (2011- 2025)	Ministry of Energy (2011)	Establishes specific and attractive tariff regimes to promote public and private investments through credit mechanisms in off-grid renewable energy.
Off-grid Energy Regulation (2021)	Decree 93/2021 of 10 December	Establishes the principles and norms of electricity distribution through mini-grids with up to 10 Megawatts (MW) and other energy services, including SHSs, public tenders, concessions for mini-grids, and energy service.
New Electricity Law (2022)	12/2022 of 11 July	It redefines the general setting of the electricity while aiming the universal access. It reinforces the strategic relevance of developing renewable energies and creating a proper enabling environment for the participation of private players.

Normative Resolution (2022)	Resolution 2/ARENE of 19 December	It regulates the interconnection of mini-grids to the national grid. It clarifies key aspects of interest of the private sector. The instruments define the models and procedures for connecting mini-grid to the national grid.

The poverty levels in Mozambique cannot allow a cost-reflective distribution of electricity access. As many households cannot afford to buy a basic SHS for minimal amenities, adopting solutions like SHS will be necessary to target most of the low-income rural households. However, despite support in the referred policy instruments and public discourse, the so-called "promising" SHS market has relied on funding from donors and development agencies. Table 3 shows the current most prominent programs supporting the off-grid market in Mozambique. While the rural electrification agency, FUNAE, implements some programs, they are financed by donors and international development agencies.

Table 3 Programs Supporting Mini-Grids in Mozambique (2022)

Program	**Financier**	**Implementer**	**Amount**
Brilho	FCDO (UK) SIDA (Sweden)	Netherlands Development Organization (SNV)	29.3 million GBP
RERD 2	Enabel (Belgium)	FUNAE (National)	12 million EURO
Green People Energy (KfW)	German Cooperation Trough KfW	MIREME & FUNAE (National)	10 million EURO
BGFA	SIDA (Sweden)	NEFCO, NIRAS, REEEP	6.7 million USD
ILUMINA	AICS (Italy)	FUNAE, AVSI, COSV	1.255 million EURO
ProEnergia	World Bank	FUNAE	450 thousand USD

Source: Author, based on ALER (2023)

Table 4 lists significant schemes supporting the adoption of SHS in Mozambique. Furthermore, under the "Brilho" program, the UK government has supported the government directly and the private sector by providing grants to help soften the fiscal burden that is ultimately transferred to the final consumers (Your Opportunities Africa, 2023).

Table 4 List of Major Programs Supporting SHS in Mozambique – 2022

Program	**Financer**	**Implementer**	**Amount**
ProEnergia +	World Bank	FUNAE (National)	53 million USD
EnDev	Germany, Netherlands, Norway, Sweden, Switzerland, EU	GIZ	37 million EURO
BRILHO	FCDO (UK), UNIDO (Sweden)	SNV	29.3 million GBP
ProEnergia	World Bank	FUNAE (National)	9.5 million USD
BGFA	SIDA (Sweden)	NEFCO, NIRAS, REEEP	6.7 million EURO
Green People En.	German Cooperation	GIZ	5.8 million EURO
ILUMINA	AICS (Italy)	FUNAE, AVSI, COSV	5.1 million EURO
REACT SSA	SIDA (Sweden)	AECF	3.28 million USD

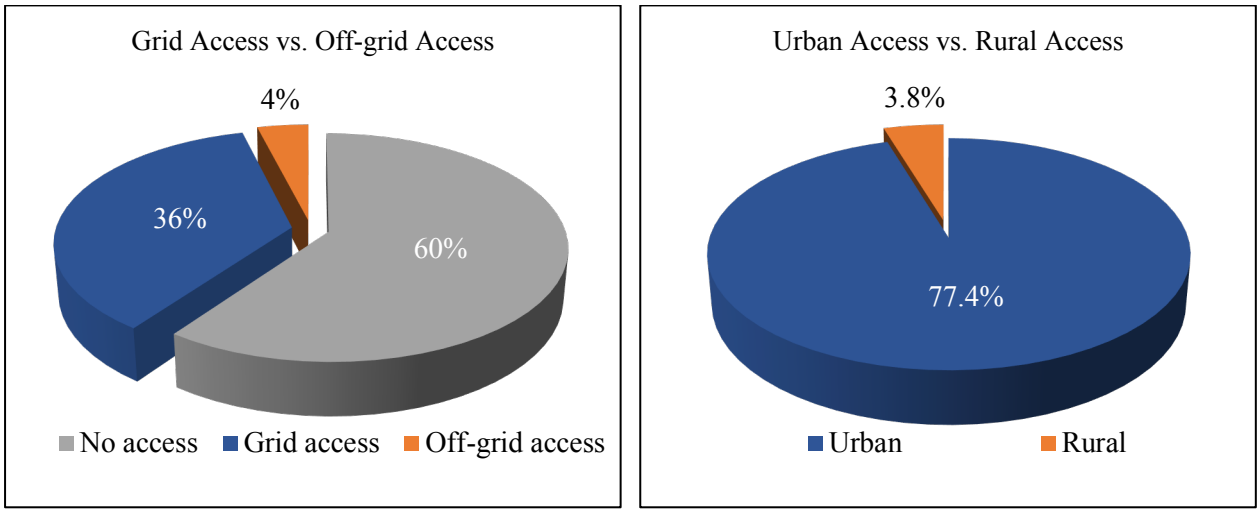
Source Author, based on ALER (2022)

The current situation of the electricity distribution suggests that the state has failed the household segment, particularly the households in the rural areas. The energy distribution in the rural, isolated regions is dominated by the state-owned FUNAE, which focuses on providing energy to public infrastructures such as schools, clinics, and administrative headquarters and several non-certified products distributed through the informal market (ALER 2021:10).

The country's energy situation is paradoxical. Although the country is endowed with vast energy potential and is a net electricity exporter to the Southern African Power Pool (SAPP), the

electricity access rate remains relatively low – about 40 percent in 2022, of which 36 percent were on-grid, and 4 percent were off-grid as illustrated in Figure 25. It also shows that in 2022, urban areas reached 77.4 percent of access through the grid against only 3.8 percent of the rural areas. Just to show how complex the situation is, while the population has been growing at an annual rate of around 2.8 percent (World Bank, 2023b), electricity access coverage has increased by about 2 percent in the last 15 years (World Bank, 2023a).

Figure 25: Electricity Access in Mozambique (2022)

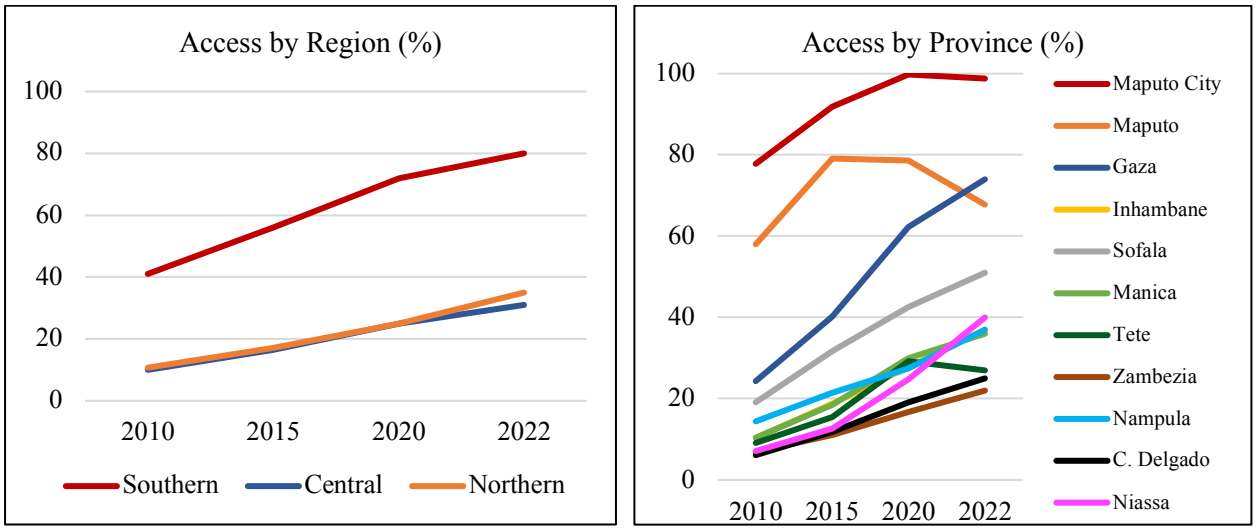


Source: Author, based on World Bank (2023a), (EDM, 2023)

The regional imbalance in access has been consistent for more than a decade. Figure 26 compares the evolution of grid electricity access distribution by region and province between 2010 and 2022. On the one hand, it shows that the southern region has, by far, the highest coverage rates – a considerable 40 percent growth in twelve years, significantly higher than other regions. The central region's coverage grew from 10 to 31 percent, and the northern region grew from 11 to 35 percent, respectively, from 2010 to 2022 – about half of the southern region's growth for the

same period. On the other hand, the comparison between provinces corroborates the regional tendency, as southern provinces are significantly better served with electricity access – as Maputo city, Maputo, and Gaza stand out with access rates of 98.8, 78.8, and 76 percent, respectively, in 2022. In contrast, central Zambezia and northern Nampula are among the least covered, with Zambezia recording the lowest rate (22 percent) and Nampula at 37 percent in 2022.

Figure 26 Electricity Access Rate Growth by Region and Province (2010-2022)



Source: Author, based on EDM (2016, 2022, 2023)

While Mozambique's domestic electricity access rate is low, the country is an essential regional exporter. One of the reasons for this paradox is that the state-owned 2.075 GW hydropower plant in central Tete province, run by HCB, is committed to a legal, political, and historical agreement with South Africa, where Mozambique will supply electricity to South Africa until 2029. Currently, the project exports electricity to South Africa, Botswana, Zimbabwe, Zambia, Lesotho, and Eswatini. Due to the poor transmission system, EDM buys back the same energy from

the South African utility company Eskom. This dissertation claims that the critical HCB power plant and other existing and planned on-grid projects are central to the state's ambition of expanding the service countrywide through the national grid.

Table 5 summarizes the country's energy situation in 2022, including energy potential and installed production capacity, total production, and allocation of electricity (comprising export, domestic consumption, and losses due to the obsolete state of the transmission lines). On the one hand, the matrix shows that the enormous energy potential for electricity production, particularly solar and hydropower, has yet to impact the country's economic transformation significantly. On the other hand, the matrix shows that the actual production level has the potential to satisfy the country's energy needs despite the country's low access rates (around 40 percent).

Table 5 Mozambique Electricity Matrix (2022)

Source Category	**Source**	**Share of Capacity (GW)**		**Production (GW/h)**	**Allocation (%)**			**Import (GW/h) ****
		Potential	Installed		Export *	Local	Grid Loss	
Renewables	Solar	23000	0.06	19,216	59.8%	31.3%	9.4%	80
	Hydro	18.6	2.22					
	Wind	4	0					
	Geothermal	0.1	0					
	Natural Gas	5	0.45					
	Biomass	2	0.04					
Fossil Fuels	Coal	0.5	0					
	Heavy Oil	N/A	0.11					
Total		**23,030.2**	**2.88**					

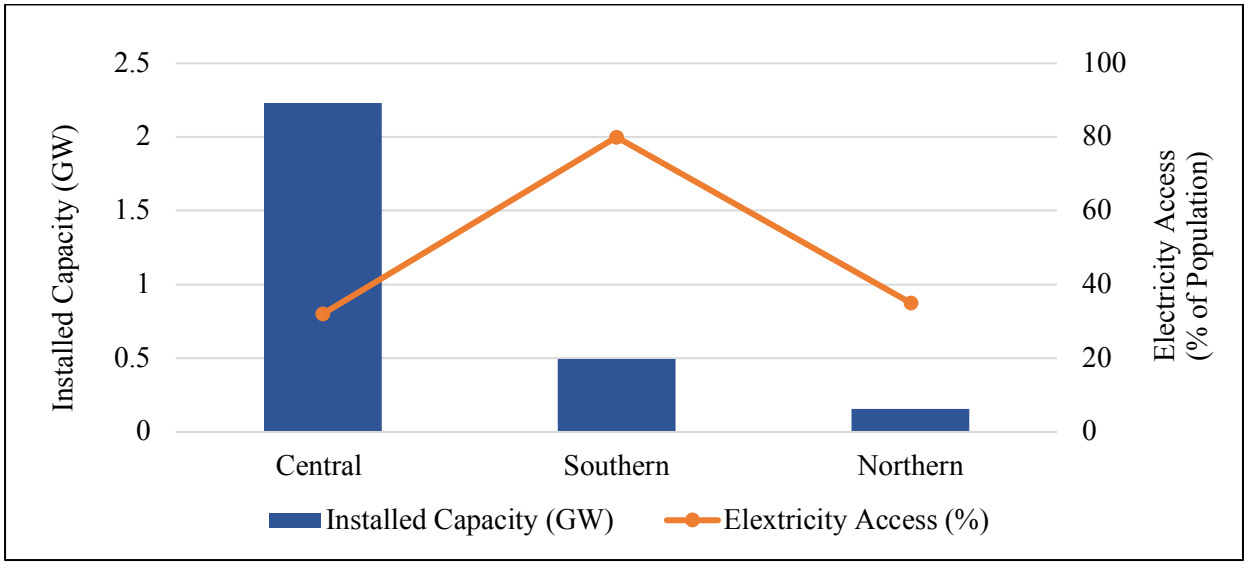
Source: Author, based on EDM (2023), HCB (2023), ALER (2022), EnergyPedia (2023)

* About regularly exported to 5 countries in the region: South Africa, Zimbabwe, Malawi, Eswatini, and Botswana.

** EDM Buy-back of the HCB electricity (exported from Tete province - central region) to South Africa through Maputo (southern region).

Regarding regional distribution of installed capacity and electricity access, as illustrated in Figure 27, the central region is the major contributor with 2.23 GW and the least electrified, with only 32 percent of access. The southern region is the second major producer, with an installed capacity of 0.49 GW and the most electrified, with an 80 percent access rate. Finally, the northern region contributes 0.15 GW and has an electricity access rate of 35 percent. On the one hand, the HCB hydropower plant is the main contributor to the high production in the central region. On the other hand, the south region gets most of its electricity from the buy-back mechanism between EDM and the South African Eskom.

Figure 27 Distribution of Electricity Installed Capacity and Access by Region (2022)



Source: Author, based on EDM (2023)

SHS is considered one of the most suitable alternatives to tackle the prevailing energy poverty in rural areas (Baruah and Coleman, 2019). According to ALER (2023), by 2022, about

412 thousand households were connected through SHS PAYGO countrywide. This figure excludes the unspecified number of households within the 3.7 million people targeted by FUNAE's Solar installations and existing (untracked) low-cost components supplied through the black market. SHS can provide 31 percent of the total demand from non-connected citizens countrywide, corresponding to 1.3 million households (ALER, 2023). However, it is essential to note that the region is still lagging behind other developing regions regarding electricity access despite the recent growing trend in the off-grid sector and the popularization of solutions to the grid extension – like SHS. The bottom-line message is that although they are cost-effective and practical solutions, their implementation has yet to confront the politics constructed around conventional technologies (including hydropower and fossil fuels-based electricity generation).

In summary, this chapter presented the macro trends of the electricity sector both in the context of the developing world and Mozambique. The ultimate objective was to provide a brief notion of the latest developments in the policy and the market. Concerning the developing world, SSA will need to multiply its efforts, including investments and technological adoption, to tackle the persistent energy poverty. Concerning the developing world, it described the challenge many countries face concerning expanding electricity access. In SSA, the problem is the most pronouncing. The region faces difficulties in expanding electricity systems through costly on-grid projects. The off-grid segment offers multiple electricity access alternatives, mainly targeting rural, isolated households. However, these choices will require a degree of political and institutional commitment, as inevitably, the government needs to implement incentives, such as incentives to promote the adoption of SHS.

Regarding Mozambique, the chapter covered two aspects. First, the country’s economic and political context, particularly the nature of state-society relations, focused on the ruling elite’s

political power and the situation concerning the activities of the CSOs. It described the situation of the struggling SSO concerning the interaction with the state and civic and political participation. Second, it covered the country's electricity system and described the governance and market sides. On the governance side, it describes the functioning of the agency framework and the policy and regulatory frameworks. On the market hand, it described the country's electricity matrix by showing its potential, production capacity, and electricity access distribution by regions and provinces. It covered the paradox of Mozambique being endowed with resources and low levels of electricity access. It also described the potentials and challenges on the off-grid side, where SHS is expected to play a critical role in minimizing the effects of the persisting energy poverty in the country. Yet, its commitment from the ruling elites remains a challenge.

CHAPTER 4 – Methodology

As a reminder, this dissertation offers an alternative explanation for the persisting energy poverty many developing countries face – which the extant perspectives cannot fully explain. It stemmed from a theoretical ground and sought to confirm the arguments using primary qualitative and secondary data. The assessment is split into two cases, discussed in two separate analysis chapters (chapters 5 and 6).

This chapter discusses the methods applied to the dissertation in two separate sections. Section 4.1 discusses the methods applied to Chapter 5, which addresses the research question 1. It discusses the data collection and analysis strategies choices, rationales, merits, and limitations, as well as describes the study locations and participants. Section 4.2 discusses the methods applied to Chapter 6, which addresses the research question 2. It discusses the data collection and analysis strategies choices, rationales, merits, and limitations and describes the participants.

4.1 Addressing the Research Question 1

Research question 1 enquires about the persistent energy poverty many developing countries face and seeks an alternative explanation to the extant perspectives. The central corresponding assumption is that amid the elite's political control and the politicization of electricity distribution, the society has been unwilling to demand effective allocation of electricity through collective action like protests and has engaged, instead, in local solutions like acquiring informal SHS from informal markets.

While past research addressed the interactions between the state and society regarding the distribution of electricity access, they primarily emphasized the state's influence. This dissertation

contends that society also plays a crucial role – especially in how citizens channel grievances on ineffective electricity access distribution. For example, exploring the notion of the elite's political control and politicization of an essential public good like electricity access may require assessing the citizen's degree of involvement with the ruling elites – commonly set through partisanship.

4.1.1 Data Collection and Analysis Strategies

Primary data was collected to scrutinize the dissertation's argument. It consisted of 395 interviews with rural and urban residents with and without electricity access in Mozambique's eleven (11) provinces conducted between December 2022 and February 2023. The extensive number of interviews was necessary to ensure representativity to all the country's eleven (11) provinces. The reason for covering the entire country is that the electricity distribution across the provinces is irregular; therefore, capturing perceptions from different experiences of electricity access would benefit the validity of the results of the dissertation. The researcher visited three provinces – northern Nampula, central Manica, southern Inhambane, and Maputo City. The data from the remaining provinces were collected by various collaborators, including school lecturers, students, and paid consultants.

The interviews helped gather the participants' perceptions and sentiments on (i) the importance of access to electricity, (ii) the responsibilities over electricity distribution, (iii) the participants' expectations about future developments in expanding access, and (iv) about spaces for dialogue with the state, and the degree of the participant's involvement in state energy initiatives. The main reason for conducting the interviews was to see patterns across participants' perceptions and sentiments regarding the state's performance in expanding electricity access, as well as the degree of their (participants') involvement with the state's electricity access expansion as well as

their participation in local initiatives aiming at demanding effective deployment of public goods, including access to electricity, and their local initiatives to address the lack of energy access.

The analysis of the interview transcripts focused on verifying variations across the data – to identify patterns and similarities and differences across the testimonies – especially differences and similarities across provinces, between residents with and without access to electricity, residents from urban and rural areas, verify along with theory and secondary data, and assess whether these patterns occurred and generate preliminary conclusions. In sequence, verify how much the extant literature explains the preliminary conclusions and how much this dissertation did to derive conclusions.

The dissertation's argument was tested by combining primary and secondary data. In general, the analysis strategy comprised inferring on the dissertation argument, supporting the inference of secondary and primary data, and quoting selected interview exerts that were the most representative and significant to back the arguments, as well as passages that best represented the inferences against the dissertation's argument. Furthermore, most quotes were derived from provinces where the researcher conducted the interviews directly.

Enquiring about the importance of electricity access was a necessary starting point to address their role in the distribution of electricity access. Enquiring about the responsibilities of electricity distribution was necessary to confirm whether the state was perceived as a monopoly in electricity distribution from the participants' view, which also informed the citizens' expectations of the state's solutions for electrification. Enquiring the space of dialogue in the sector and the participants' expectations over the state's future solutions for the low electricity access was necessary to understand the society's attitude towards the state's performance in providing the

service – particularly the long-standing regime that failed systematically to bring about the desired energy wellbeing to the citizens.

As the interview participants' perceptions do not capture the entire spectrum of perception of the reality concerning the performance of the state in distributing electricity access, secondary data was critical in reconfirming the validity of the dissertation's argument – particularly in validating the arguments concerning the potential connection between the elite's political control, the politicization of electricity distribution, and the low and irregular distribution of electricity access.

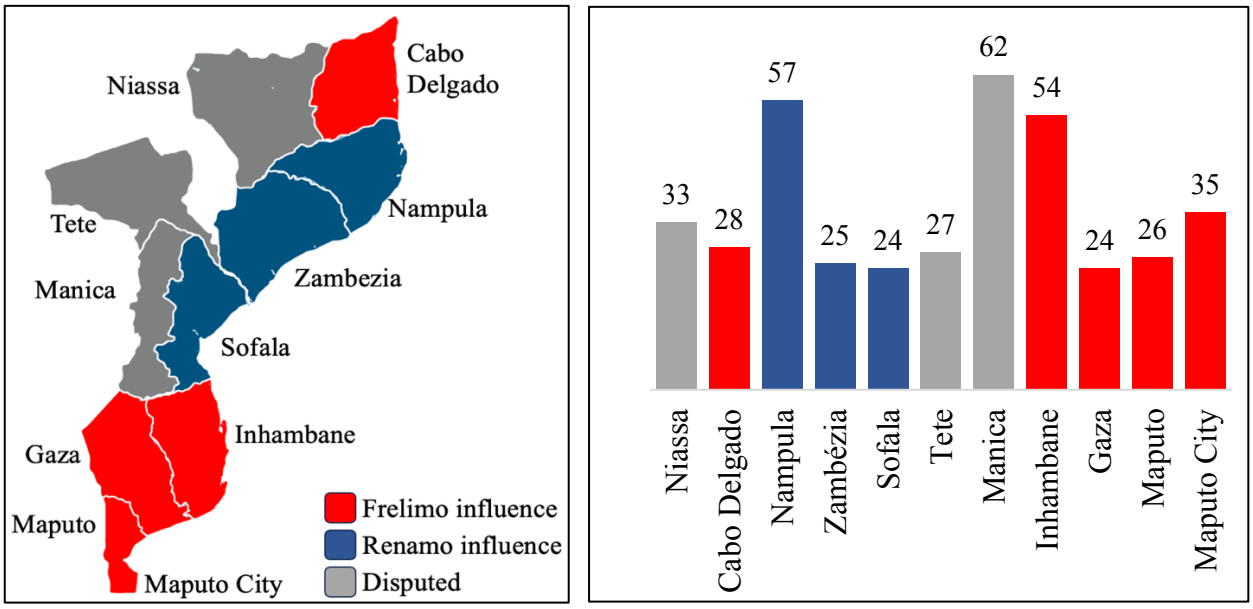
Given that the interviews intended to explore testimonies concerning the interactions between the state and the society, which may lead to apparently sensitive political-related topics such as rents and clientelist interests to which many participants expressed reservation. Assuring identity privacy was somehow crucial in securing collaboration from the respondents. Furthermore, most of the questions were asked roundabout to avoid putting pressure on providing personal details.

4.1.2 Study Locations and Participants

The fieldwork was conducted between December 2022 and February 2023 and covered all 11 provinces of Mozambique. At least the capital cities and one distant district were covered in each province. The intention behind covering all provinces was to minimize selection bias by partisanship. Figure 28 shows the distribution of respondents across all 11 provinces. The provinces are highlighted by colors attributed to partisanship between the ruling party, FRELIMO (in red), and the second major party, RENAMO (in blue). The distribution of partisanship shows that FRELIMO essentially "controls" the southern region while the central and northern regions are

disputed between both parties. However, RENAMO dominates two of the country's most populated provinces – the central Zambezia and the northern Namupula.

Figure 28 Partisanship Distribution of Respondents by Province



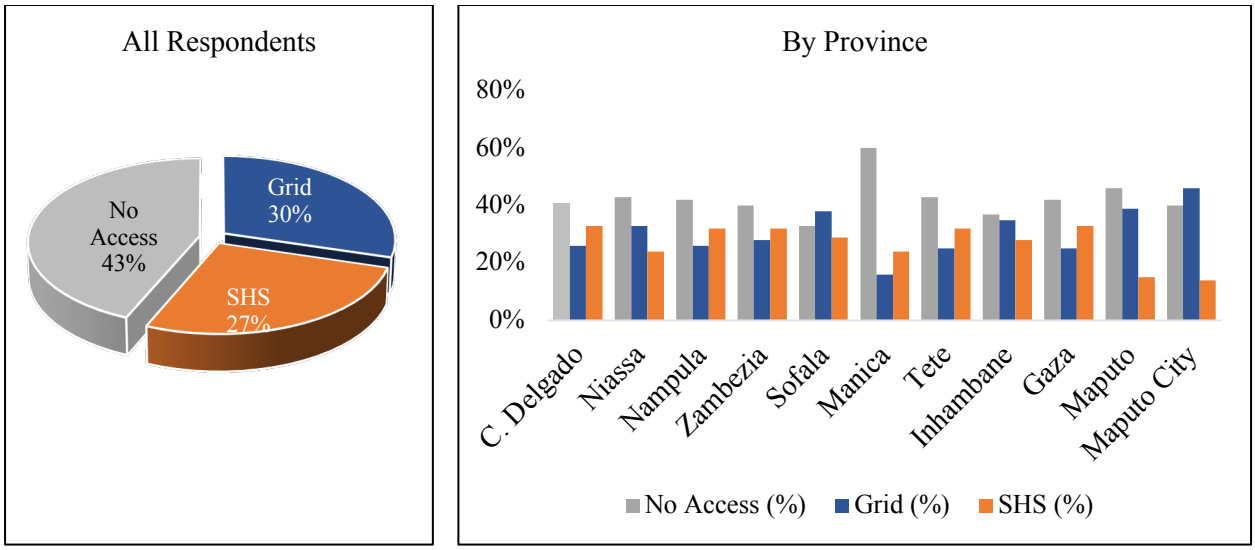
Source: Author

A total of 395 rural (59.7%) and urban (40.3%) residents – of which male residents (68.3%) and female residents (31.7%) – were interviewed. The respondents were selected based on the criteria of their role in the household (preferably one of the heads of the household). The reason for using this criterion was to ensure that the respondents had a degree of interaction with the state energy agency, a notion about electricity service costs, and a notion about local solutions for electricity access. Most of the interviews conducted in rural areas took place in the respondents' neighborhoods and houses, and they were asked to suggest potential interviewees who met the selection criteria. Most interviews with urban residents took place in public spaces like

supermarkets, sports facilities, and schools distributed across areas with significant grid electrification coverage, areas without electricity access and areas with a concentration of SHS connections. The selection criteria followed a convenience sampling mainly due to time and logistical constraints.

The respondents comprised residents with access to electricity (56.5%) – of which 29.6 percent have access through the national grid, and 26.8 percent have access through SHS – and without access to electricity (43.5%), as shown in Figure 29. Figure 29 also shows the distribution of respondents by electricity access technology by province. As the figures show a relative balance between the three groups of respondents, it allowed the capture of fairly distributed perceptions. Furthermore, having more respondents without access to any source of electricity also allowed the research to capture a wide range of grievances concerning the lack of electricity from a group of people that may better represent the sentiments of the residents without access to electricity.

Figure 29 Distribution of Respondents by Electricity Access Technology



Source: Author

4.2 Addressing the Research Question 2

While assessing 'why the SHS segment has not received much governmental attention in Mozambique,' the discussion in Chapter 6 narrows the debate regarding the elite's political control and distribution of electricity to assess whether the elite's political control over electricity distribution has a role in the state's reluctance to support the adoption of SHS as a complement to grid extension. The main argument in Chapter 6 is that the elite's political control over the mechanisms of electricity access distribution disrupts the state's ability to deploy effective policies for electricity distribution, including the state's ability to support the adoption of decentralized solutions like SHS.

As SHS is relatively less regulated, in a scenario of excessive control of the distribution of electricity access for political and economic, SHS may not be suitable to advance such agendas; therefore, the state may not be compelled to support its adoption and popularization. The fundamental reason here is that SHS generally requires minimal regulation by the state, especially the tiny systems intended for providing basic energy amenities for low-income households.

4.2.1 Data Collection and Analysis Strategies

Given this dissertation's assumption of the role of the elite's political control and its related political and economic interests and the unsuitability of the SHS segment to advance such interests, the next task was to collect primary data to scrutinize the argument. The primary data consisted of semi-structured interviews – conducted in Mozambique between September and November of 2021 – with key respondents representing various stakeholder groups. Covering multiple groups

of stakeholders was necessary to gather a balanced set of perceptions and opinions from people dealing with the very issue of electricity expansion in Mozambique.

In total, 30 interviews were conducted with key informants from five stakeholder groups with diverse knowledge about the governance of the electricity sector. The interviews sought to gather the respondents' views on (i) the potential of the SHS as a practical alternative to grid expansion, (ii) the state's performance in governing the off-grid sector, and (iii) the ruling elite's political and economic interests involved in the distribution of electricity access.

The interviews were necessary to confirm the dissertation's argument that SHS may threaten the ruling elite's interests in utilizing the energy sector for wealth accumulation and political-electoral advantages. Precisely, they were necessary to (i) confirm the relevance of SHS, not only as a practical, low-cost alternative to grid extension, but also its relevance from the perspective of the critical energy stakeholders, particularly the state energy agencies; (ii) to confirm the assumption that due the systematic political pressure, the policy implementation in the electricity sector has been significantly inconsistent with the ambitious measures announced in the policy and regulatory documents; (iii) to unveil the mechanism through which the politicization of distribution of electricity access prevent the adoption of SHS, and ultimately constrains the effective distribution of electricity access in Mozambique.

The analysis of the interview transcripts comprised interpreting the themes from 30 semi-structured interviews to identify similarities and differences across the set of opinions and assess and check the patterns against theory and secondary data to form conclusions. As the strategy allowed gathering and interpreting relevant insights from key stakeholders of the sector, it cannot offer the entire spectrum of perception in the sector and the reality concerning the political aspects surrounding the logic of the priorities of electricity distribution in Mozambique. Also, as the

interviews addressed political aspects that are difficult to unveil, the testimonies cannot be deemed entirely accurate due to potential biases inherent to people's perceptions and sentiments.

As strategies to minimize the weaknesses, during the interviews, the respondents were assured total confidentiality – non-disclosure of personal details, and that the testimonies would serve exclusively academic purposes. On the analysis side, applying secondary data may help counterbalance the risks.

4.2.2 Participants

The interview respondents were selected through purposive and snowball sampling strategies. They comprise four groups of stakeholders, including state energy agencies (MIREME, ARENE, EDM, and FUNAE), private companies, development programs, and consultants and scholars. Table 6 lists all quoted respondents and includes interview settings and date details.

State officials are top-level representatives of FUNAE, ARENE, MIREME and EDM who understand the state's energy priorities, as they are involved in daily policymaking, regulation, energy markets on-grid and off-grid. The private companies' representatives are involved with electricity expansion, including the experiences in rural, isolated areas where the grid cannot target communities. The representatives of the international development agencies deal with several policies and financial and technical assistance to state and private companies, including various initiatives to decentralize the sector. The scholars have substantial research experience in the energy field, with numerous published research works on renewable off-grid electrification solutions, including SHSs, and vast experience in assisting policy formulation. The consultants have broad experience collaborating with state agencies, private companies, and international development agencies, particularly in the off-grid sector.

Table 6 Quoted Respondents

Interviewee	**Interview Setting**	**Date of Interview**
Senior state official 1 (from FUNAE)	Maputo	October 8, 2021
Senior state official 2 (from ARENE)	Maputo	September 26, 2021
Senior state official 3 (from MIREME)	Online (Zoom meeting)	November 11, 2021
Senior state official 4 (from EDM)	Online (Zoom meeting)	October 20, 2021
State official 5 (from ARENE)	Online (Zoom meeting)	October 12, 2021
Development program official 1	Online (Zoom meeting)	October 20, 2021
Private company official 1	Online (Zoom meeting)	November 11, 2021
Scholar 1	Online (Zoom meeting)	October 8, 2021
Scholar 2	Maputo	October 12, 2021
Scholar 3	Maputo	October 1, 2021
Scholar 4	Online (Zoom meeting)	October 13, 2021
Consultant 1	Online (Zoom meeting)	October 11, 2021
Consultant 2	Online (Zoom meeting)	October 12, 2021
Consultant 3	Maputo	October 18, 2021

The interviews were conducted during COVID-19, so the process was challenging due to the restrictions on physical gatherings. Also, the fact that access to the internet in Mozambique remains a significant constraint added more challenges to materializing the interviews. Combining face-to-face and online interviews was the solution to minimize the limitations. Second, most participants seemed cautious about speaking on political issues that lead to politicization, clientelism, corruption, and rent-seeking. Ensuring the informants' anonymity was essential to comfort most respondents in addressing such issues.

This chapter discussed the two formats of methods applied to the analysis chapter of this dissertation. On the one hand, it reiterated that this dissertation stems from theoretical grounds and is needed to validate the arguments through primary and secondary data. On the other hand, it

discussed (i) the strategies of data collection and analysis of 395 interviews that addressed the roles of political control, the state, and society in the distribution of electricity in Mozambique and (ii) the strategies of data collection and analysis of 30 semi-structured interviews that addressed the roles of the elite's political control and the state in the developments of the SHS segment in Mozambique.

CHAPTER 5 – State, Society, and Access to Electricity in Mozambique

This analysis chapter discusses the role of state-society relations in Mozambique's low levels and irregular distribution of electricity access. It addresses the role of the elite's political control in the country's pattern of electricity access distribution and the citizens' stance on the state concerning the allocation of electricity. It also discusses the citizen's perception of the responsibilities over service provision, expectations of the state's solutions, and local electricity access initiatives. Section 5.1 discussed the importance of electricity access mainly from the lens of the interview respondents. Section 5.2 discusses the perceptions of the responsibilities over electricity distribution in Mozambique. Section 5.3 discusses the role of society in the state's performance in distributing electricity. The chapter concludes with a summary of the main discussions in the sections.

5.1 The Importance of Electricity Access

Assessing the interviewees' perceptions concerning the place of electricity in their lives was crucial before starting a more complex analysis of their role in expanding electricity access. Although most of the population, especially in rural areas, rely on kerosene and firewood for illumination and cooking, the interviews suggest that electricity is an engine for essential daily activities. As illustrated in Table 7, this question was one of the most consensual – about 97 percent of participants perceive access to electricity as essential to daily life.

Table 7 Respondents' Perception of the Importance of Accessing Electricity

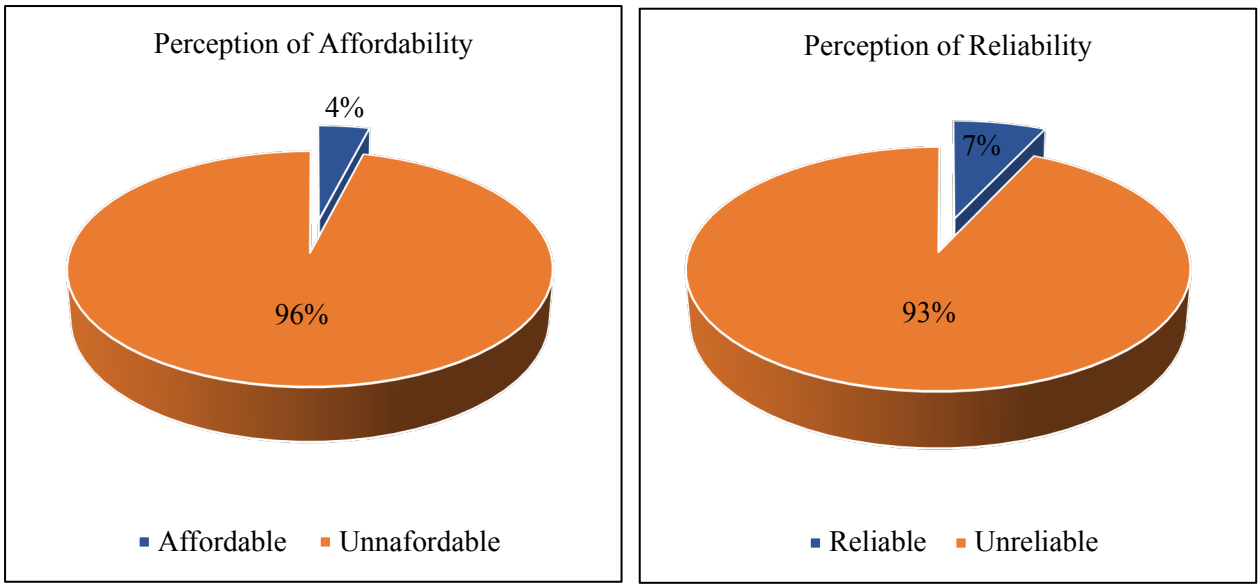
Provinces	Respondents (N=395)	Electricity is important	Electricity access is not important/Other*
Maputo City	35	99%	1%
Maputo	26	98%	2%
Gaza	24	95%	5%
Inhambane	54	88%	12%
Cabo Delgado	28	97%	3%
Niassa	33	93%	7%
Nampula	57	97%	3%
Zambézia	25	96%	4%
Sofala	24	100%	0%
Manica	62	99%	1%
Tete	27	95%	5%

* Includes "I don't know" and unresponsive answers

As stated earlier, enquiring about the importance of electricity in people's lives is an important starting point for understanding people's perceptions of the state's performance in the distribution of the service and the perceptions of the citizen's role in the outcomes of the service's distribution.

Despite the quasi-consensus consensus on the importance of having an electricity connection, the dominant perception amongst the participants connected to the national grid (30%) was that electricity would play a more significant role in people's lives by providing affordable and stable services. As shown in Figure 30, of the 30 percent of respondents connected through the national grid, about 96 percent stated that the electricity provided by EDM is unreliable and unaffordable.

Figure 30 Perception of Affordability and Reliability of Electricity services Among Respondents Connected to Grid



Source: Author

On the other hand, among respondents without access to electricity (43%) and those connected through SHS (27%), the ambition of being connected to a stable electricity grid is mostly to perform minimum amenities, such as illumination, charging mobile phones, powering radio, and night illumination.

An urban resident[13] from Beira City, in Sofala province, stated that having electricity has been a positive experience, except for the cost of the service. According to him:

"Electricity is very important in our lives, it would be impossible to live without it, as it allows us to have access to health services, education, access to information, and considering

[13] Interviewed in Beira, Sofala Province, on February 27, 2023.

that Mozambican is still trying to develop, people are still struggling with poverty, so the government should consider applying lower tariffs."

An urban resident[14] from Chimoio, Manica Province, pointed out that the government needs to address the reliability issue, as it is unstable and only available for a few hours. According to her:

"Since we cannot avoid the use of electricity in our daily activities, I think it should be available to everyone…another problem is related to assistance, it is really frustrating that we have to wait for several hours and sometimes for days until EDM comes to our neighborhood to fix the blackout."

A rural resident[15] connected through SHS in Macate district, Manica Province, pointed out the importance of electricity connection by stating her family hopes EDM will target their community. According to her, "…the government should be more considerate to people who have been waiting so long to get connected…we have been planning to start a small business, but we cannot start because we do not have access to stable electricity…"

A rural resident[16] without access to electricity from Cuamba, Niassa province, speaks of his experience of waiting for years to have access to electricity. According to him:

"I heard from my radio that the government will soon target our community…it is good news that, finally, we will be able to watch TV, read at night and do many other things… it is not

[14] Interviewed in Chimoio, Manica Province, on January 13, 2023.
[15] Interviewed in Macate, Manica Province, on February 7, 2023.
[16] Interviewed in Cuamba, Niassa Province, January 10, 2023.

the first time that the government promises to electrify our community… there is nothing we can do but wait for them to come."

As stated earlier, high electricity demand gives the service political salience that can be revealed in promises and arrangements by politicians in pursuit of electoral support of groups (Scott & Seth, 2013:2). Although a clear link between citizens' reliance on the state's solution to electricity access and the fact public utility, EDM, has the monopoly of the grid, it cannot be ruled out that the condition is maximized for economic and political gains – e.g., business with the public electricity company EDM and promises of expansion and affordable electricity access in exchange for vote). This research claims that when citizens rely on a single supply source of such essential public goods, the supplier can exercise control over the demanders.

The interviews helped confirm that electricity access is crucial for people's livelihood. Beyond that, there are differences in expectations over getting access to reliable electricity. While residents with access to electricity expect the service to be reliable and affordable, the residents without access, particularly rural residents, "dream" of the moment they can use electricity. While the difference in expectation can have multiple interpretations, it is relevant to note that when the expectation over access in the context of a monopolized supply chain, such services may become a mere tool to "perpetuate" the dependency, which the ruling elites can politically leverage. The following subsection discusses the perception of dependency on a single provider, and how it can become a tool for political advantage.

5.2 Responsibilities Over Electricity Distribution

Looking at the state's performance in distributing public goods, including electricity access, from the angle of the elite's political control in Mozambique offers relevant insights about how the policy has been set and under whose political influence – including the influence in defining priorities in the distribution of electricity access. While FRELIMO managed to grow its influence in the country's economic and political spheres over time, its leaders managed to keep the state as a quasi-monopoly in distributing essential public goods, including access to water, aviation services, and electricity services, to mention a few. This subsection discusses the residents' perception of responsibilities over electricity distribution from the angle of the role of the elite's political control in the patterns and poor outcomes of the electricity access distribution in Mozambique.

Like in most SSA countries, the political organization in Mozambique is patrimonialistic, where the exercise of authority significantly relies on the power of influential individuals or groups within the ruling party. FRELIMO managed – immediately after the independence – to control the channels through which resource distribution is negotiated. In this process, the expansion of electricity access has been central to wealth accumulation by influential individuals within or associated with the party.

There is a triumphalist narrative that positions the state as the "champion" of the distribution of public goods, which is not strange to the energy sector. Mainly from the most conservative senior officials of MIREME, EDM, and FUNAE, it is expected that the state has a social mission, is capable, and will provide energy to all Mozambicans. As a state's senior official[17] stated, "the state

[17] Interviewed in Maputo, on October 8, 2021. The respondent has extensive experience in policymaking, regulation, and market intervention. Also, have worked with multiple state energy agencies and currently hold a prominent role at the top of MIREME's governance structure.

is trying to make sure that there is a leader from the public sector to oversee the on and off-grid segments and ensure that energy remains accessible to all." Another official[18] stated that having a strong state in the market is crucial to mediate eventual market practices that may exclude low-income households. While it is not easy to determine if this notion of a "capable state" influences the practices of electricity access distribution in a larger sense, it is observable that the state has managed to achieve little in terms of expanding electricity access, especially throughout the rural areas, which challenges the narrative.

One would ask if the narrative of a 'capable state' is not serving an agenda that favors entities interested in doing business with the state under the umbrella of state-centered (EDM and Funae) electricity distribution – signaling a conflict of interest. What is particularly interesting here is that the grid utility EDM remains – by law – solely responsible for electricity transmission and transportation despite struggling to remain a viable company for decades. Some officials describe the notion of conflict of interests as not simple to defend. To mention one example, a top official[19] considered that what is seen in the policymaking, regulation, and implementation of strategies cannot be associated with conflict of interest: "…it is simply a gradual decentralization process that is taking place, as ARENE is taking the position to deal with critical regulatory issues such as tariffs."

While the government has publicized the intention of decentralizing for many years – at least since 2009, with the introduction of various policy documents indicating significant reforms in the sector – little concrete outcome has been seen so far. Furthermore, it is easily observable that the overlapped mandate exercise remains a significant issue in the sector's governance. ARENE,

[18] Interviewed online, on October 20, 2021. Has large experience in grid expansion planning.
[19] Interviewed online (zoom), on November 11, 2021. Has large experience as policymaker.

the energy sector regulator, has unsuccessfully attempted to play its legal role since 2017 while competing with MIREME, the policymaker.

Groups of influential individuals chasing energy resources rent opportunities only to guarantee their benefits and somehow bring prejudice to the progress of energy infrastructure expansion, including electricity access. An energy activist and researcher[20] stated, "some attitudes of associating state businesses with political interests often lead to confusion of priorities in the sector."

An energy policy researcher[21] alleged that during his duties as a state official in rural electrification activities, witnessed many episodes that led him to conclude that one of the most decisive criteria for electricity distribution is the electoral political interests of the ruling party. According to him:

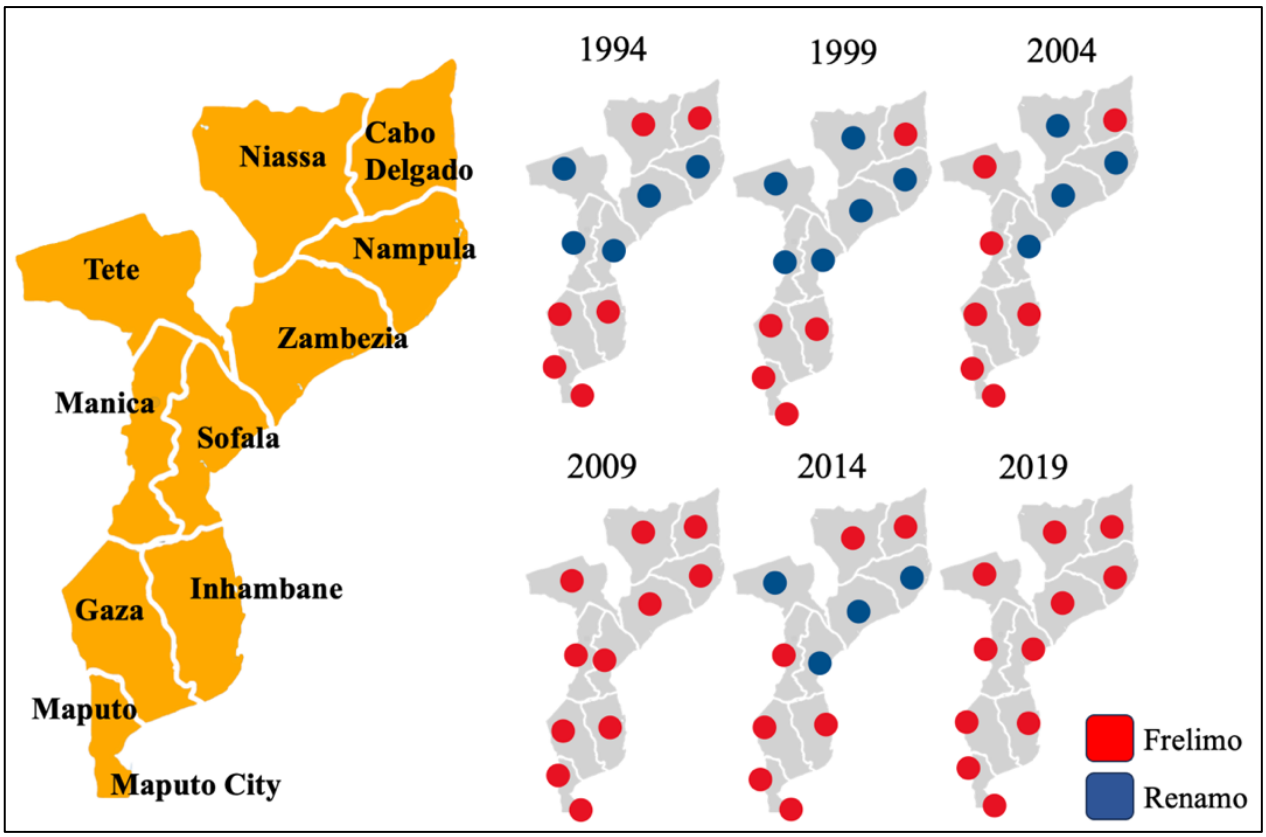
> " Funae's limited resources from donors are allocated to expand energy where it is more politically favorable…for example, the infrastructure is placed where an influential ruling elite member has a business interest."

This view is corroborated by a law researcher[22] who considers electoral periods crucial in infrastructure promises and development, including electricity infrastructure. He said that "… the periods that follow the elections are typical of the abandonment of many initiatives and promises…".

[20] Interviewed in Maputo city, on February 24, 2023. She has interest in research on energy policy, particularly on rural electrification.
[21] Interviewed in Beira, Sofala province, on February 24, 2023. Has large experience in research about decentralized renewables. Has worked several years with an energy agency in Mozambique.
[22] Interviewed in Chimoio, Manica province, on January 10, 2023. Has an interest in energy policy.

Figure 31 shows the distribution of political support between FRELIMO and RENAMO by province, based on presidential and legislative elections between 1994 and 2019. It shows that – except for the elections of 2009 and 2019 in which FRELIMO won in all eleven (11) provinces – historically, the southern region and the northern province of Cabo Delgado supported FRELIMO, while the central provinces of Zambezia and Sofala and the northern province of Nampula historically supported RENAMO. The rest of the provinces are disputed between the two parties.

Figure 31 Distribution of Electoral Victory Between FRELIMO and RENAMO by Province



Source: Author, based on African Elections (2006), Hanlon (2021)

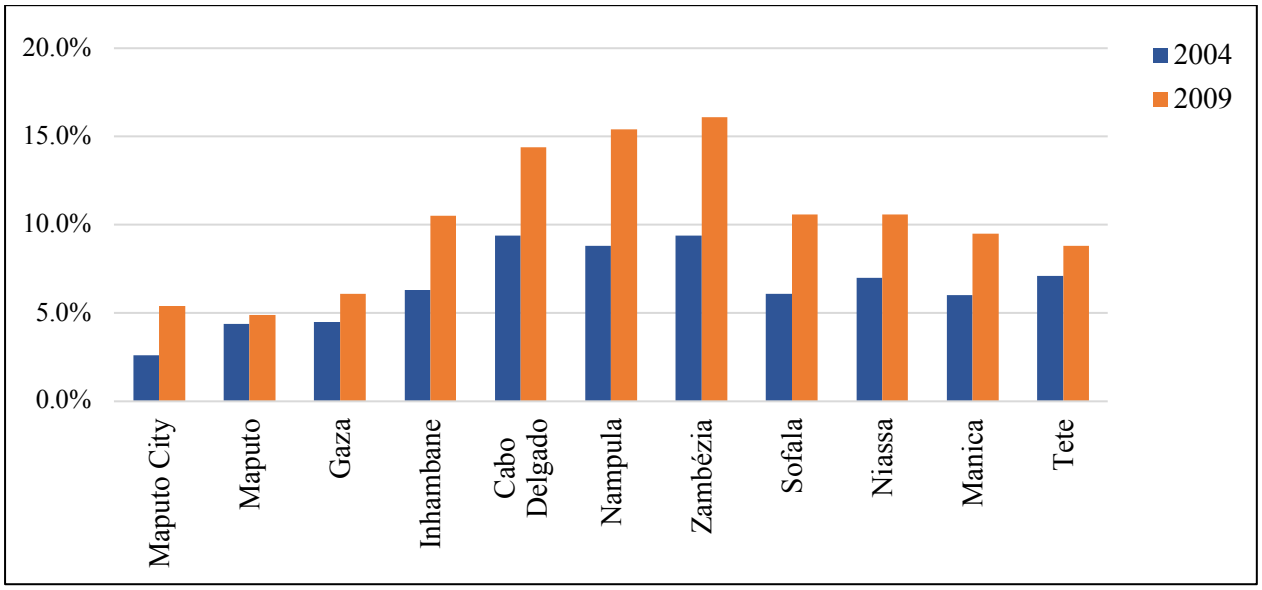
Every electoral process held in Mozambique led to a degree of post-electoral conflict, mainly opposing FRELIMO and RENANO – with the latter claiming that the processes were rigged with the complicity of the electoral body, the police, the constitutional courts, the observers, and electricity public utility, to mention some. The electoral campaigns were usually marked by moments of tension where RENAMO accused FRELIMO of using the electoral bodies to exclude their potential voters and polling station observers, the police to intimidate their supporters, and the media to limit their coverage time. The 2009 and 2019 elections, particularly, were marked by an increase in the allegations of fraud in favor of FRELIMO.

In the 2009 elections, the concerns were reported by various observers, including media, CSOs, and the European Union Election Observation Mission. According to (European Union Election Observation Mission, 2009:4), "… the broader electoral process was weakened by the insufficient measures of transparency shown by the country's electoral authorities, by an unlevel playing field during the electoral campaign, and by limitations concerning voter choice at the local level." The report adds that "the absence of fundamental measures of transparency, however, did not enable a precise statistical assessment of the distortions of local results caused by these irregularities." (European Union Election Observation Mission, 2009:4). Another problem that may explain the poor results from the opposition parties in the 2009 elections was the relatively small voter turnout, a considerable imbalance between provinces that support FRELIMO and those that support the opposition parties. According to De Brito (2009), besides registering only a 46% turnout, provinces that traditionally support the opposition parties had an average above the national average (56.3%), way more than provinces that traditionally support FRELIMO. While the abstention level can be explained by various factors, including the variation in education levels

and poverty (Victorino and Sousa, 2016), it can also be explained by the general dissatisfaction among the voters due to the perception that the pollical system, particularly the electoral system, is not conducive to free expression of people's political preferences (De Brito, 2009).

Figure 32 shows the change in the percentage of nullified votes by provinces between the 2004 and 2009 elections. While the figure shows that most of the provinces had a significant increase in the nullified votes from the 2004 elections, Zambezia and Nampula – the two biggest electoral bases of the country and supporting bases for RENAMO – had a considerable change from 2004 to 2009. Given that the two provinces comprise about 40 percent of the entire population of Mozambique, these figures suggest that the abstention significantly influenced the poor performance of RENAMO. Also, except for Inhambane, the most vibrant FRELIMO supporting bases had relatively small increases in the nullified votes. While no compressive report explains these figures, deliberate action to favor FRELIMO cannot be ruled out.

Figure 32 Change in Percentage of Nullified Votes from 2004 to 2009 Elections by Province



Source: Author, based on De Brito (2009)

In the 2019 elections, FRELIMO entered the process somehow "fragilized" in public opinion as a repercussion of the "USD 2 billion hidden debt" scandal; however, it managed to secure an expressive victory in all provinces. This time, the serious allegations of fraud started even before the voter's registration period – when the Technical Secretariat of Electoral Administration (STAE) declared that 80 percent of the population in Gaza – one of FRELIMO's bastions – was eligible to vote against all statistical possibilities. The average eligible voting age across the provinces varied between 48 percent in 1997 to 45 percent in 2017 (Francisco, 2019). According to media coverage of opinions from political science experts and the general public, this episode was the beginning of FRELIMO's massive victory in the elections. According to the European Union Election Observation Mission (2019:31), "the electoral effect of over-registering 453,170 voters in Gaza became apparent after polling results were released."

Recurrent reports of violence against members of the opposing party and CSOs also market the 2019 elections. The most notable case was the assassination of a preeminent electoral observer from the civil society – by six members of the police (Lusa, 2023) – who was allegedly preparing to disclose a detailed report on the preparation of electoral fraud that would benefit the ruling party FRELIMO (Mabunda, 2020). As reported by the European Union Election Observation Mission (2019:1), "One week before the elections, the murder of a prominent national observer by members of the national police force had the effect of exacerbating an already existing climate of fear and self-censorship prevalent in Mozambican society."

FRELIMO's political dominance in Mozambique has been unquestionable since the country gained independence from Portugal. As stated earlier, the party managed to become the main channel through which many economic opportunities are negotiated. As the state dominates

the system of the distribution of essential services in the country, members of ruling elites become new business owners and, for many years, have been using state-owned enterprises (SOEs) and public utility companies to materialize their economic and political goals. The electricity company EDM, the telecommunication company Mozambique Telecom (in Portuguese Tmcel), former Mozambique Cellular (Mcel), and the airline company Mozambique Airlines (in Portuguese *Linhas Aéreas de Moçambique* – LAM) are some of the most pronounced examples of public companies that FRELIMO and its associates have significantly used to consolidate their political influence while securing profits for them. The three companies have been financially unsustainable over many years while dealing with severe corruption cases involving many state officials at various levels and FRELIMO influential figures.

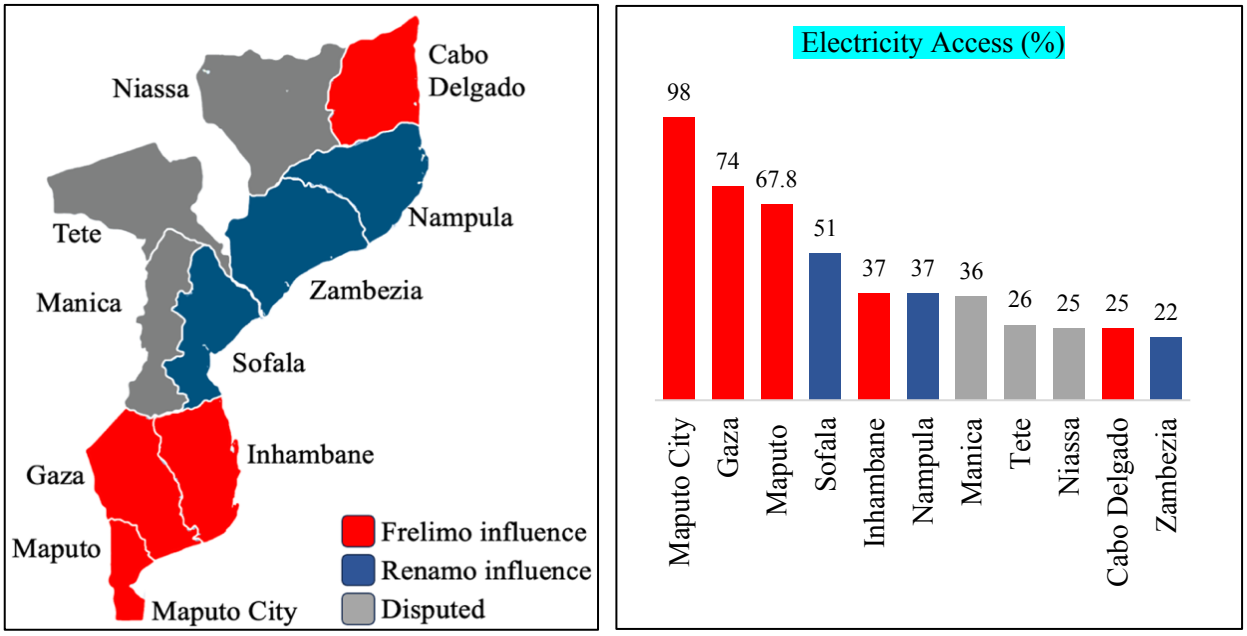
EDM is a monopoly in electricity transmission, distribution, and commercialization. However, its performance in delivering effective service (both in terms of coverage and quality) is poor, as corruption, non-transparent contracts and deals, and unpaid bills in favor of big companies and public institutions are said to play a significant role in the problem (Nhamire & Mosca, 2014; Nhamire et al., 2019a; Folha de Maputo, 2018). TMcel used to be a monopoly of the telecommunication segment in the country and currently has 13 percent of the market share (Barton, 2023). Years of rampant corruption, mismanagement, and unpaid bills have led the company to bankruptcy, as the company is currently struggling with debts that mount to over USD 300 Million and several unsolved court cases (AIM, 2023a; Barton, 2023; Camaraman, 2021). LAM, a monopoly in the aviation sector, has been struggling for many years to offer decent services to the public. The company has made several headlines in the news for corruption scandals, operational and technological mismanagement, and debts. As reported by a consultancy company, FRELIMO ranks at the top of the list of debtors – alongside ministries, private companies, and the Mozambican

army – with a total of about USD 500 thousand (AIM, 2023a). The company had countless court cases over corruption, including a case that sentenced a former Minister of Transportation and Communication (Paulo Zucula) to 10 years of jail time in 2021 (Club of Mozambique, 2021). Like Tmcel, LAM is on the brink of collapse and bankruptcy, as in 2022 alone, the company declared a loss of USD 74.6 million (AIM, 2023b).

The distribution of electricity access in Mozambique has been, for many years, irregular, unreliable, and costly (mainly for low-income households). Given that EDM has exclusivity in distributing the service through the national grid and Funae dominates the market in the off-grid sector, the state has remained a vital figure in the citizens' expectations of accessing electricity. Given the importance of electricity for people's livelihoods and the state's dominance in the sector, the distribution of electricity access has been systematically used by the ruling elites to advance FRELIMO's electoral interests.

Figure 33 displays the distribution of electricity access – through the national grid managed by EDM – and partisanship by province in 2022 and shows that, generally, provinces where the ruling party, FRELIMO, traditionally dominates have relatively better than RENAMO-controlled and disputed provinces. Unlike Cabo Delgado and Inhambane, FRELIMO-controlled provinces have access rates almost double those of the remaining ones. It also shows that the provinces where RENAMO traditionally dominates – except Sofala – where the country's second capital city is located, generally rank among the least covered, particularly Zambezia, the least covered province.

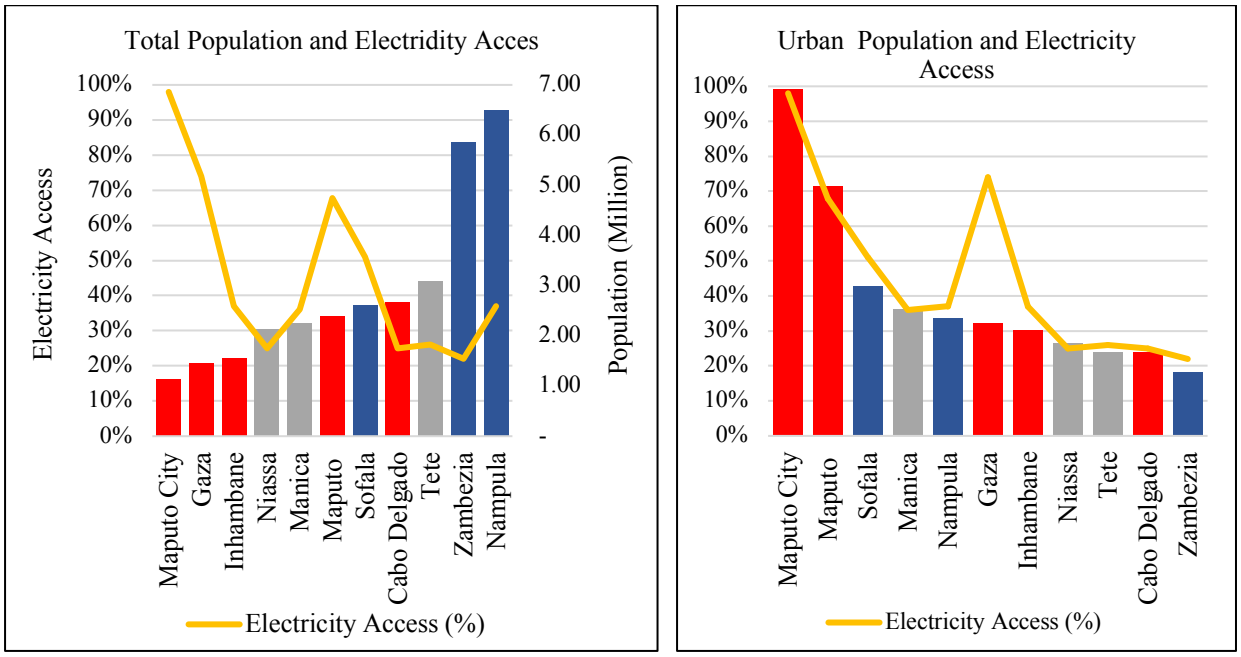
Figure 33 Distribution of Electricity and Political Support by Province (2022)



Source: Author, based on EDM (2023)

A comparison of the distribution of grid electricity access and the size of the population by province also offers relevant insights. Figure 34 displays (i) the distribution of electricity access rates and the size of the population and (ii) the distribution of electricity access rates and the urban population. On the one hand, at first look, a comparison between total population and electricity access rates suggests that, in general, there is a consistency between the two indicators – meaning that a larger population leads to lower electricity coverage; however, the comparison between percentage of urban population and electricity access rates tells a slightly different story. It shows that the ratio of electricity access/urban population in Gaza and Inhambane is relatively higher than in RENAMO-controlled and disputed provinces, excluding Sofala, which suggests that rural electrification in Gaza and Inhambane is more privileged than in most RENAMO-controlled and disputed provinces.

Figure 34 Distribution of Electricity Access and Population by Province (2022)



Source: Author, based on EDM (2023), INE (2023)

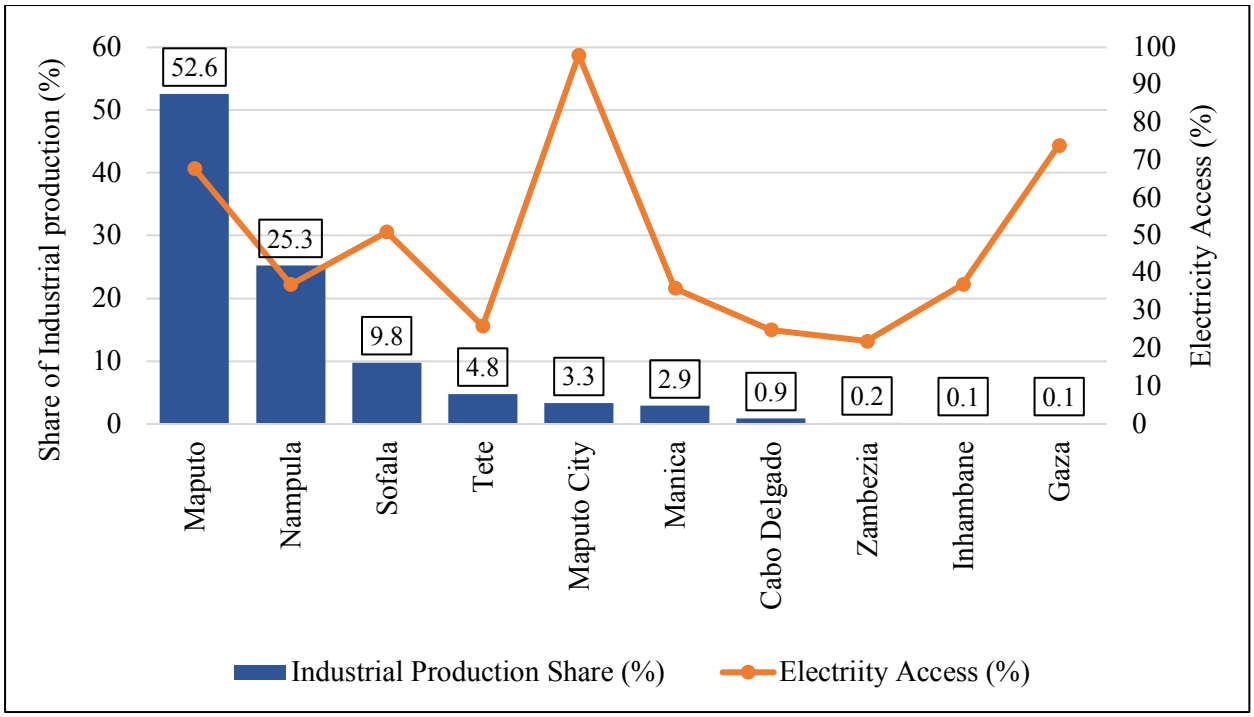
Gaza stands out in most of the figures. It is the top 2 most covered province, above Maputo and the Sofala. Its access rate is double that of most RENAMO-controlled and disputed provinces. According to MIREME's top official[23], Gaza has gained much of its electricity coverage due to its proximity to Maputo City. As Gaza is located about 320 km from Maputo City, the argument sounds coherent when looking at the situation of Inhambane – which is located about 480 km from Maputo City; it is paradoxical when looking at the case of Maputo – which is located about 20 km from Maputo city. Also, unlike any other province, the electricity access rate in Gaza is more than double the percentage of its urban population.

[23] Interviewed in Maputo city, on January 25, 2023. Has occupied top seats at EDM and FUNAE. Has large experience with policy adoption and expansion of electricity access.

The political power in Mozambique has historically been associated with the people of the southern region and influential liberation movement leaders from the northern province of Cabo Delgado. Gaza is the most "vibrant" FRELIMO's bastion – as it is the home for the most celebrated founders of the party. Gaza's voter turnouts for FRELIMO in every six elections average around 85 percent. However, why is Cabo Delgado province, one of the bastions of the ruling party FRELIMO, among the least covered provinces? While the questions can raise multiple answers, generally "equally" poorly served with electricity regardless of where the ruling party enjoys significant support. As shown in Figure 34, the electricity access rate in Gaza in 2022 (25%) is nearly the same as the size of the urban population (24%). This, ultimately, suggests that expanding electricity throughout these isolated spaces is not within the ruling elite's interests.

Another intriguing aspect that suggests partisan criteria for electricity expansion emerged from comparing the distribution of electricity access and the contribution to industrial production. Maputo, Nampula, Sofala, Tete, and Maputo City are usually the country's most significant industrial production contributors (Government of Mozambique, 2023). Figure 35 shows that industrial activity is not crucial for electricity access distribution. For example, Gaza and Inhambane, provinces that contribute the least to industrial production, have the second and fifth-highest electricity access rates, respectively. Nampula, the second most industrially vibrant province, has electricity access similar to Inhambane.

Figure 35 Share of Industrial Production vs. Electricity Access by Province (2022)



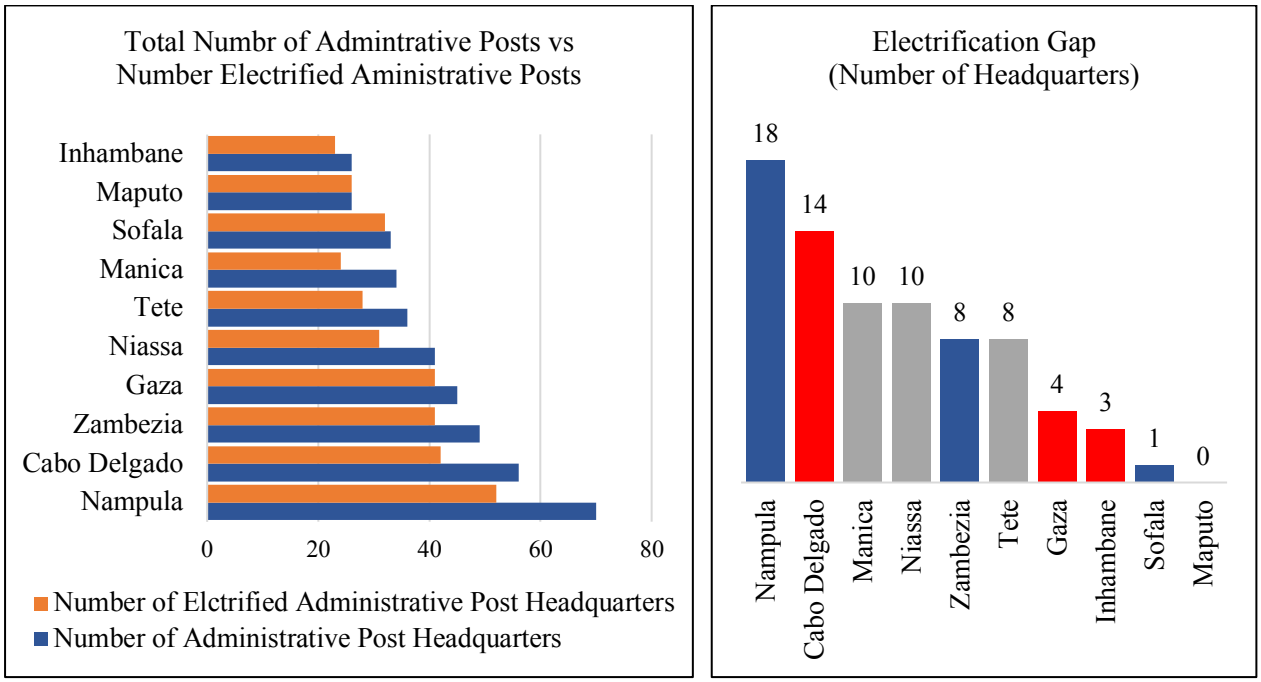
Source: Author, based on EDM (2023), Government of Mozambique (2023)

The patterns of rural electrification in Mozambique tell two different stories that suggest that, in general, where the state is significantly involved in the materialization of electricity projects – such as EDM control of the grid, provinces controlled by FRELIMO are better served than those RENAMO-controlled and disputed provinces. However, when the state has reduced involvement, the patterns of electricity access tend to be different.

On the one hand, Figure 36 compares the difference between the total number of administrative post headquarters and the number of electrified administrative headquarters by province, excluding Maputo city. The figures refer to electrification mainly through the national grid. It shows that, except for Cabo Delgado and Sofala, the electrification gap in RENAMO-

controlled and disputed provinces is higher than in FRELIMO-controlled provinces. Also, Nampula has a gap of 18 non-electrified headquarters, more than four times higher than Gaza's and Inhambane's. While Sofala is home to the country's second capital city, Beira City, Maputo is the largest industrial province.

Figure 36 Number of Electrified Administrative Posts by Province (2022)

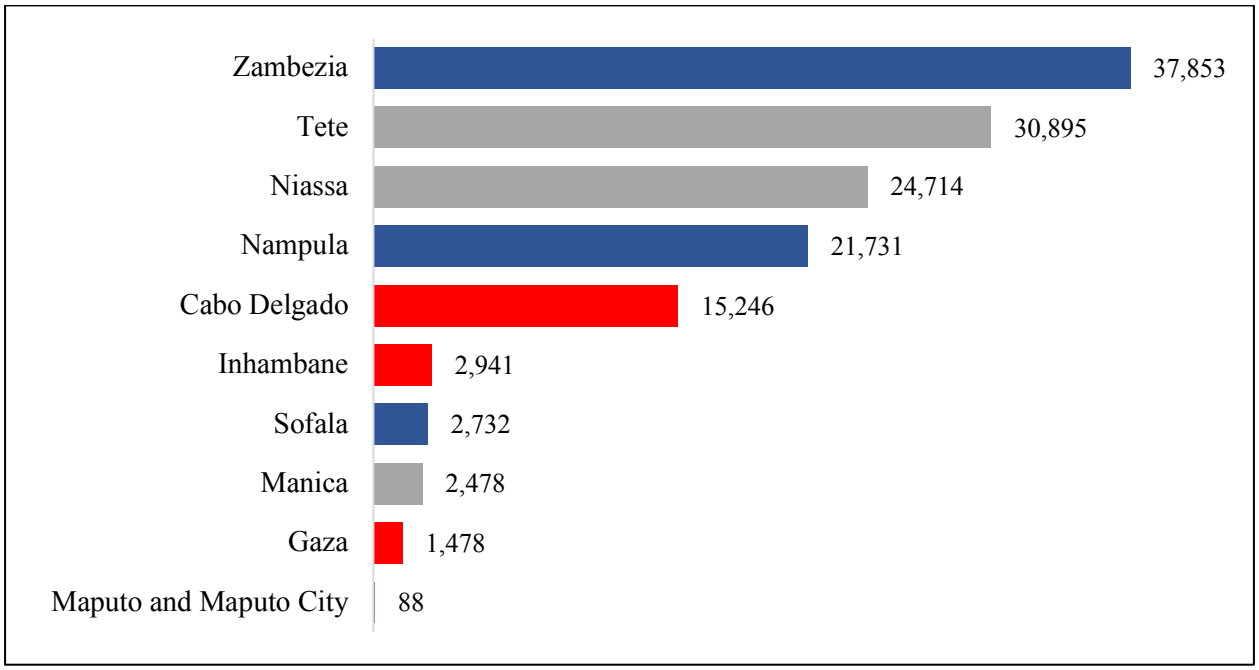


Source: Author, based on Resolution 52/2023 (2023:3541)

On the other hand, Figure 37 shows the cumulative number of connections made through mini-grids by province and a different pattern than the grid extension displayed in Figure 36. It shows that RENAMO-controlled and disputed provinces have significantly more connections than FRELIMO-controlled, particularly Inhambane, Gaza, Maputo, and Maputo City. Cabo Delgado has a relatively high number of connections, so it is significantly lower than the top for more connected provinces (Zambezia, Tete, Niassa, and Nampula). As discussed earlier, the off-grid is

dominated by FUNAE; however, most projects involve the private sector, development agencies, and donors. This suggests that where the state dominates, the electricity access pattern tends, in general, to favor provinces dominated by FRELIMO, which does not happen where the private sector, development agencies, and donors have a significant stake.

Figure 37 Distribution of Number of Electricity Connections Through Mini-grids (2022)



Source: Author, based on Resolution 52/2023 (2023:3541)

The apparent linkages between the geography of electricity and partisanship by province are somehow corroborated by patterns across participants' expressed stances on the state's approaches and priorities in expanding electricity access. As shown in Table 8, although, generally, there is a relatively negative stance – expressed by about 62 percent of the participants – the interviews revealed that there is a relatively significant moderate in provinces where FRELIMO

has significant influence, except for Maputo City, where the citizens are vocal in scrutinizing the government's developmental approaches.

Table 8 Respondents' Perception of the State's Performance in Distributing Electricity

Provinces	**Respondents (N=395)**	**Moderate Stance***	**Negative Stance****	**Neither/Other*****
Maputo City	35	23%	59%	18%
Maputo	26	64%	22%	14%
Gaza	24	49%	30%	21%
Inhambane	54	53%	39%	8%
C. Delgado	28	42%	49%	9%
Niassa	33	7 %	82%	11%
Nampula	57	10%	78%	12%
Zambézia	25	5%	81%	14%
Sofala	24	7%	88%	5%
Manica	62	12%	79%	9%
Tete	27	19%	75%	6%
Average		**26%**	**62%**	**12%**

Source: Author

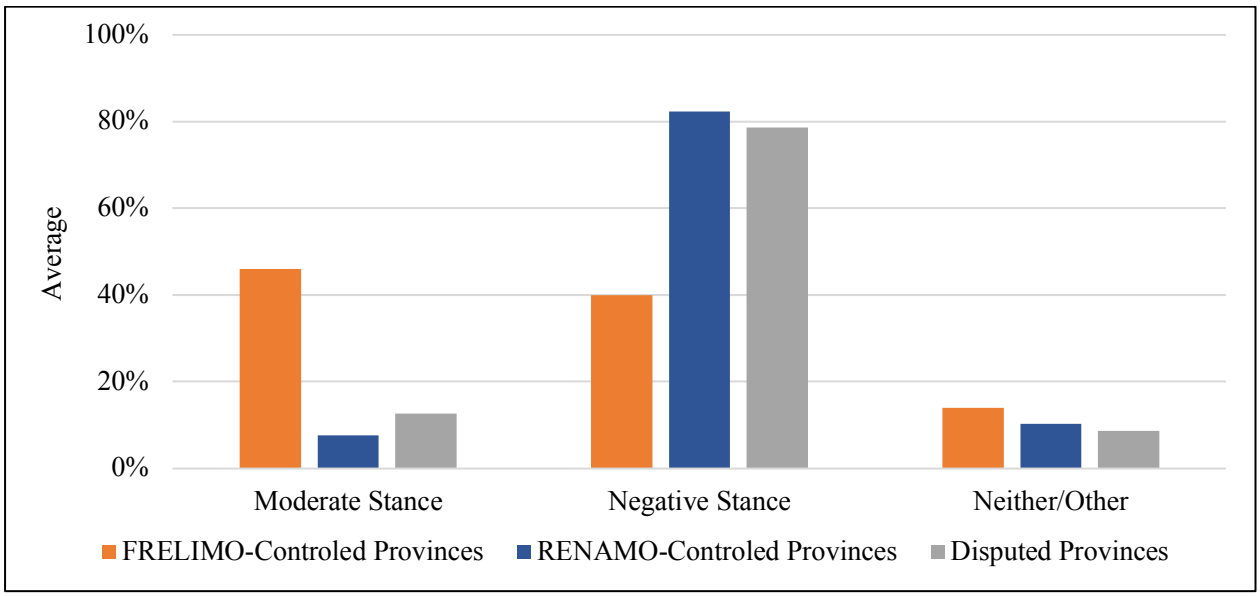
* Includes opinions that consider state as willing and or able to distribute electricity today and in the future.

** Includes opinions that consider state as unwilling and or unable to distribute electricity today and in future.

*** Includes participants who stated, "I don't know", did not want to comment or provided unresponsive answer.

Figure 38 shows that, on average, FRELIMO-controlled provinces have more respondents with moderate stance towards the state's performance in distributing electricity than other provinces; However, there was a relative balance between moderate and negative stances (46% and 40%, respectively). The figure also highlights the significant difference in the percentage of participants who expressed a negative stance toward the state's performance in electricity distribution. RENAMO-controlled provinces recorded 82 percent, and disputed provinces recorded 79 percent against 43 percent of FRELIMO-controlled provinces.

Figure 38 Participants' Perception of the Current State's Performance In Distributing Electricity (by Partisanship)

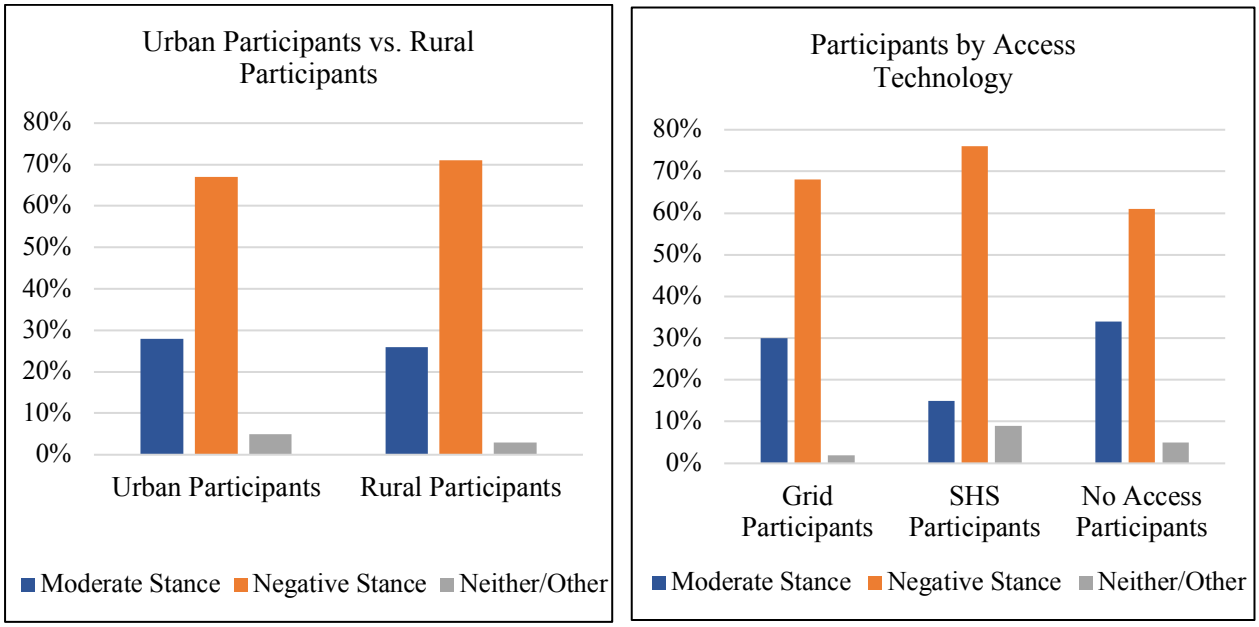


Source: Author

Furthermore, across the regions and provinces, it emerged that while connected residents, notably urban residents, had a moderate stance towards the current situation of electricity coverage, residents without access to electricity, notably rural residents, were more pessimistic regarding the state's approach and the future developments in electricity access expansion. As shown in Figure 39, about 81 percent of rural participants, about 76 percent of participants with access to SHS, and about 80 percent without access to electricity expressed a negative stance towards the state's performance. Meanwhile, about 67 percent of urban participants and 68 percent of grid-connected participants expressed a somewhat moderate stance. Overall, the figures suggest that regardless of the partisanship pattern, rural residents, residents connected through SHS, and those without access

to electricity somewhat have a sympathetic opinion of the state's performance in distributing electricity.

Figure 39: Participants' Perceptions of State's Performance in Distributing Electricity (Urban vs. Rural and by Access Technology)



Source: Author

Referring to testimonies that reveal a sympathetic stance towards the performance of the state, for example, a rural resident[24] in Mawaela, Inhambane province, who used SHS stated on expectations over electricity access: "We are still waiting for the government promise that has been a while; however, at least we have solar panels thanks to the same government." A resident[25] in Panda, Inhambane province, pointed out, "…the responsibility over electricity connection is either of the government or whoever is interested in getting connected."

[24] Interviewed in Mawaela, Inhambane province, on February 17, 2023.
[25] Interviewed in Panda, Inhambane province, on February 21, 2023.

Another rural resident[26] from Quissanga District, Cabo Delgado province, who is not connected to the electricity grid, expressed that:

> "Although I think EDM should provide electricity to us, I cannot say that lack of electricity access is the government 's responsibility because the expansion of electricity also follows the logic of local development (…) if the community is not developing, electricity will not come."

A resident from Paquite, district of Pemba, in Cabo Delgado province,[27] expressed a "sympathetic" opinion about the quality of the electricity service by the public utility, EDM. While addressing the question of who is responsible for providing electricity service, she stated: "EDM is responsible for providing electricity because it is the government (…) I am confident the government will provide electricity to all… the only thing that concerns us is the cost of the service…" While most of EDM's clients would report negative experiences with the quality of the service offered, this resident's testimony suggests that lack of alternatives reliable alternative for electricity access, the government, and, somehow, FRELIMO are regarded as the sole provider of the service – in a province historically dominated by FRELIMO.

Another curious testimony from Cabo Delgado places the state as the most relevant entity in the community, although facing several constraints concerning the quality of electricity services being supplied. A resident from Paquite[28] community stated that:

[26] Interviewed in Quissanga, Cabo Delgado province, on February 03, 2023.
[27] Interviewed in Paquite, Cabo Delgado province, on February 02, 2023.
[28] Interviewed in Paquite, Cabo Delgado province, on February 02, 2023.

> "The Government is responsible for providing electricity because it is the only entity that can do so… the Government is essential here in our community because it allows us to develop our small businesses in the community…however, we face many problems with the quality of the service."

A resident in Xai-Xai City, Gaza Province[29], who has no connection to the electricity grid and relies on a precarious SHS that serves only minimal functions of charging mobile phone and illumination, stated: "the government must give us electricity (…) however, while the government has not been able to do so we have to try our best to manage to be connected…we can buy SHS, batteries to stay connected."

Referring to testimonies that reveal sentiment of relative unfairness concerning the access to electricity that, especially in regions where electricity access levels are relatively low, the opposition party RENAMO enjoys support. As a resident[30] in Cahique, Nampula province, expressed, "electricity is important, and we need it now (…) we are suffering without electricity, and it seems like the government does not see our suffering."

Another resident from Cahique community, Nampula province, expressed that "…the government should expand electricity to target the last citizen in isolated areas…everyone has equal rights and deserves to be connected…". A resident[31] in Macate, Manica province, stated, "the government must give electricity to the people, as the government is benefiting from huge help from the residents (…) we are begging the government to give us electricity."

[29] Interviewed in Xai-Xai, Gaza province, on February 16, 2023.
[30] Interviewed in Nampula, Nampula province, on January 23, 2023.
[31] Interviewed in Macate, Manica province, on January 13, 2023.

The testimonies above ultimately support this research's claim that the long journey FRELIMO underwent as the patron – the powerful controller and provider – of the public goods and as the strict "police" of the public grievances" may generally have, prompted a passive attitude less prone to demonstrate grievance among the resident – especially in regions where FRELIMO enjoys significant support. On the other hand, even residents from regions where FRELIMO enjoys less support, besides facing challenges in accessing electricity, have adopted non-confrontational demands for effective service allocation. These aspects are discussed further in the following subsection.

Two cases featuring the ruling elites' influence in the patterns of public good distribution offer relevant insights that help make sense of how the elite's political control can constrain the effective deployment of electricity access. The first case refers to a controversy involving an Independent Power Producer (IPP) company owned by influential FRELIMO's senior members that sealed an unusual power purchasing agreement (PPA) deal with the public electricity utility EDM, which is proven to be financially unsustainable for the utility, and unjustifiable. Essentially, it is a rent-seeking case of a deal where EDM is paying almost double the price (in the market) to secure the electricity supply in Maputo province.

Gigawatt is a 200 million USD 120 MW – installed capacity thermoelectric power project based in Maputo province that sells 100 percent of its generation to the public utility EDM. It was inaugurated in 2016 and has benefited from an advantageous – non-transparent, long-term deal. The glaring issue with Gigawatt is that it is an investment that belongs (partially) to a well-known and influential politician related to the ruling FRELIMO – the former president Armando Guebuza (Caldeira, 2016;Nhamire et al., 2019; Gesto Energy, 2014). Another important aspect is that EDM pays between 9.5 and 10 USD per kilowatt/hour (kWh), which is triple the tariff EDM pays to

secure 300 MW of electricity from the state-owned HCB. From HCB, EDM pays 3,5 USD/kWh (Gesto Energy, 2014).

The second case addresses the encounters of one of the cash transfer programs that became one of the biggest financial scandals involving the government and FRELIMO supporters. The program is known as District Development Initiative – Seven Million (in Portuguese *Iniciativa de Desenvolvimento do Distrito – 7 Milhões*). The case raises notions of clientelist networks and suspicions of mechanisms of compensation distribution among FRELIMO supporters and individuals who did not met the eligibility criteria countrywide. Seven Million program started in 2006 when the FRELIMO government, led by former president Armando Guebuza, approved a budget for local (district) economic development, named Budget For Local Initiative Investment, in Portuguese – *Orçamento de Investmento de Iniciativa Local* (OIIL). The original and declared plan was to boost the local (district) development through direct support to small businesses focusing on food production and job creation. (Orre & Forquilha, 2012).

The strategy comprised giving loans to local businesses at zero interest rates, and the principal should be returned to the government after a certain period to guarantee the program's sustainability. Although many suspicions emerged against the procedures, timing, and motivations associated with the initiative, the government did not experience any setbacks in implementing it (Orre & Forquilha, 2012; Sande, 2011; Henrique, 2017). Up to 2011, the government had already transferred about 200 million USD, about 2 percent of the state budget (Orre & Forquilha, 2012).

The first concern started emerging with news about the misuse of the funds within the district governments. One of the most salient controversies involved some district officials who allegedly used the funds for public infrastructure – which was seen as a strategy to hide possible misuse of the budget to finance personal interests. However, no action was taken to correct the

situation. Around 2015, the project stopped making the due transfers to the district commission, which was responsible for materializing the project.

The following concern was the news indicating that the commissions struggled to secure repayment from the beneficiaries. For example, in the southern province of Inhambane, by 2014, the reimbursement rate was 16 percent (Luciano da Conceição, 2017). The program was suffering from many illegalities from the beginning. First, the selection of the beneficiaries was, in many cases, conducted by FRELIMO's representatives, including, in the last stance, local chefs in the neighborhood. Second, although there is no significant official information about the standing point of the funds, it is known that most of the beneficiaries (mostly FRELIMO's supporters and individuals with successful businesses) never repaid the loans. Despite the state losing significant money with the program, there is no information about the targeted businesses' accountability and situations.

Besides exposing the influence ruling elites can exert in the distribution of public goods in Mozambique, the two cases described above also offer lessons on how they (the ruling elites) can play the referred influence and avoid being held accountable for any wrongdoings in utilizing public goods to secure personal gains. In both cases, although plenty of criminal encounters were easily visible, to date, no responsibility (neither administrative nor legal) was moved despite "clear" elements of criminal activities surfaced.

The interviews revealed that, generally, despite the differences in perceptions of the state's current performance and expectations over future developments in electricity distribution, the state is, in general, perceived as solely responsible for providing electricity access. As Table 9 shows, although some participants expressed that the private sector, public-private initiatives, and communities should be more significant in expanding electricity services, most participants across

provinces expressed that the state is responsible for distributing electricity. Table 9 also shows the average distribution of participants' perceptions by responsible entity across the provinces, highlighting that about 79 percent of participants per province expressed that the state is the main responsible for distributing electricity.

Table 9 Participants Perception of the Responsibility Over Electricity Distribution

Provinces	**Respondents (N=395)**	**State***	**Private Sector**	**State & Private Sector**	**Residents**	**Other****
Maputo City	35	61%	20%	18%	1%	0%
Maputo	26	72%	16%	4%	7%	1%
Gaza	24	73%	11%	13%	0%	3%
Inhambane	54	68%	9%	21%	0%	2%
C. Delgado	28	83%	5%	9%	0%	3%
Niassa	33	87%	3%	8%	0%	2%
Nampula	57	92%	1%	4%	2%	1%
Zambézia	25	77%	11%	7%	0%	5%
Sofala	24	90%	2%	7%	0%	1%
Manica	62	79%	5%	9%	3%	4%
Tete	27	90%	2%	2%	0%	6%
Average		**79%**	**8%**	**9%**	**1%**	**3%**

Source: Author

* A significant number of respondents, somehow, could not establish distinction between state when referring to government, FRELIMO, and EDM.

** Includes community projects, individual (household) responsibility, NGOs, any entity with ability to do, 'I don't know.'

As stated by an urban resident[32] in Maputo City:

[32] Interviewed in Maputo City, on February 26, 2023.

"The scenario of allocation of electricity in Mozambique is that we depend on a system where the state is the provider of the service and is visibly inefficient in doing so (…), but we know that in the long run, the state has to give energy to all."

Another urban resident[33] in Beira City, Munhava neighborhood, stated that:

"EDM services are very limited in terms of reach, and to make it worse, it is costly (…) I feel that the process of expanding energy will be slow until everyone gets the chance to get connected (…) maybe EDM or the government is trying their best, however, I do not see the objective of giving energy to the entire population to materialize anytime soon."

A rural resident[34] without access to electricity from Tete province stated:

"I expect that EDM finally will address the issue of lack of electricity…we always have community meetings to discuss many issues, and we always ask our community leaders to interact with the Government to do us a favor of connecting our community with electricity (…) we will be grateful to the Government if they do so."

Another rural resident from Gurue district, Zambézia province, stated:

"The government has the autonomy to distribute electricity (…) I remember when we did not have energy in our community, and the Government surprised us with the installation of energy here (…) I want to encourage the government to continue expanding the energy from Cahora Bassa because many people still lack access."

[33] Interviewed in Beira City, Sofala province, on February 25, 2023.
[34] Interviewed in Tete, on January 23, 2023.

While it is unclear why this perception exists among rural residents, it is fair to argue that the residents in both urban and rural areas have never experienced a competitive market of electricity provision – apart from the recent emergence of decentralized solutions like SHS. Given that SHS is a short to mid-term solution to electricity access, the state will remain the principal provider. It will remain the center of residents' ambition to connect to reliable electricity. This means that the elite's political control will likely continue playing a significant role in the country's electricity distribution patterns.

Ultimately, the analysis of the testimonies reveals that the state is perceived as the "savior" of electricity access in urban and rural spaces. In other words, regardless of the expected timing of the service allocation, the existing perception of favoritism towards one group to the detriment of others, and its reliability, the state is at the center of people's expectation to have access to electricity. In a competitive political environment, where strategic resources are at the center of ambition for power and policy control, access to electricity can be used to perpetuate one group in power by controlling its distribution mechanisms and distributing targeted benefits to loyal groups and individuals. A question one would ask is: amid significant control of the sources of allocation of essential public goods, what alternatives are there for the residents, particularly residents without access to electricity and those located in rural, isolated areas? This question is addressed in the following subsection.

5.3 The Role of Society

As discussed earlier, the civic space to address grievances on the ineffective distribution of public goods in Mozambique is closed. The government has been repressive to protest initiatives. When the state cannot bring about socio-economic transformation, financing large infrastructural projects,

including electricity projects, may be a significant challenge. In Mozambique, with the political scenario undisputedly dominated by FRELIMO, the society seems unsuccessful in demanding an effective allocation of electricity access – e.g., through electoral threats or protests.

As discussed earlier, the space for civic participation in Mozambique seems to be deteriorating. The country has consistently scored partially free in Freedom House's Freedom in the World Scores over the past years. According to Freedom House (2023a), the ruling party, FRELIMO, established significant control over state institutions immediately after declaring independence in 1975. This control over state institutions has been unshakable throughout the years while the opposition parties continue to seem to become weaker, judging by FRELIMO's massive victories in the most recent electoral scrutinies.

As one of the recent pieces of evidence of the tight control FRELIMO's government exercise in society, an attempt of a pacific demonstration by youth in Maputo city to honor the late rapper and social activist – Edson da Luz, popularly known as 'Azagaia,' was promptly repressed. Intriguingly, the referred demonstration was dully "authorized" by the authorities (Amnesty International, 2023; VOA, 2023; AP News, 2023; The East African, 2023). This episode is a "perfect" picture of the government's stance towards popular demonstrations by citizens countrywide.

The discussion in the previous sections also indicated no significant concern about electricity access in Mozambique, especially throughout rural areas. The literature, news reports, and other secondary sources mainly report on events of protests over land conflicts, high food and public transportation costs, and electricity tariffs, particularly in urban and peri-urban spaces. However, some localized events made news headlines over the years. For example, as reported by RFI (2022) on June 11: "The police shot a 13-year-old child during a popular in Murrapaniua,

Nampula city. Nine other people were arrested in connection with the protests during which people demanded electricity in the neighborhood where the majority use the service through illegal connections."

According to one of the protestors, who also had illegal electricity connections, the reason behind the protests was that the residents were "tired" of waiting to see the unfulfilled promises of electricity connection in the neighborhood. Despite the event, the neighborhood's residents hope to have electricity access. A local media agency (Ikweli, 2023) reported on May 31 that 800 families were still struggling to access electricity through the state utility, EDM, while raising concerns about corruption. According to the report: "Although electricity towers are crossing the neighborhood, 800 families live without electricity in Murrapaniua, communal unity Terrene B, in Nampula city, allegedly due to lack of money to bribe the EDM agents to accelerate the connection."

Amid persisting energy poverty – notably throughout the rural areas – the residents seem left with limited alternatives to satisfy energy needs. However, there are examples of local self-mobilization initiatives to ensure access to basic energy technology such as clean cooking and illumination. Either it is a sign that the rural residents have failed to demand an effective allocation of electricity or just a sign of local resilience, the scenario is "beneficial" to the state as the energy agencies get less pressure to take urgent measures to ensure the availability of the service to the citizens.

Local people's perceptions may be relevant in understanding the factor behind the lack of access to electricity. A conversation with some residents in the locality of Nkombedzi, Vanduzi district, Manica province, about local perception concerning responsibilities and expectations over electricity expansion revealed that the residents may not be expecting much from the government to get connected with electricity. For example, as one of the residents stated, "we want electricity

in our homes, and we have money to pay for it, however, we do not like the quality of these solar panels that people bring to us here, we want good quality solar panels." Besides this informing about people's expectations of the state's solution to electricity access, particularly in rural areas, the testimony also indicated what was argued previously: that the residents are generally unwilling to address grievances on infective allocation of electricity through pressure politics (e.g., protests), and are more inclined to use local solutions to access electricity services, like SHSs.

The interviews revealed that most participants did not expect significant improvements in expanding electricity access in the short to mid-term. Similarly to the negative stance towards state performance in electricity distribution, Table 10 shows that, on average, 62 percent of participants expected no significant changes concerning electricity distribution per province. In comparison, 34 percent did expect, and 4 percent expressed other opinions or did not address the matter.

Table 10 Participants' Expectations Over Future Developments in Electricity Distribution

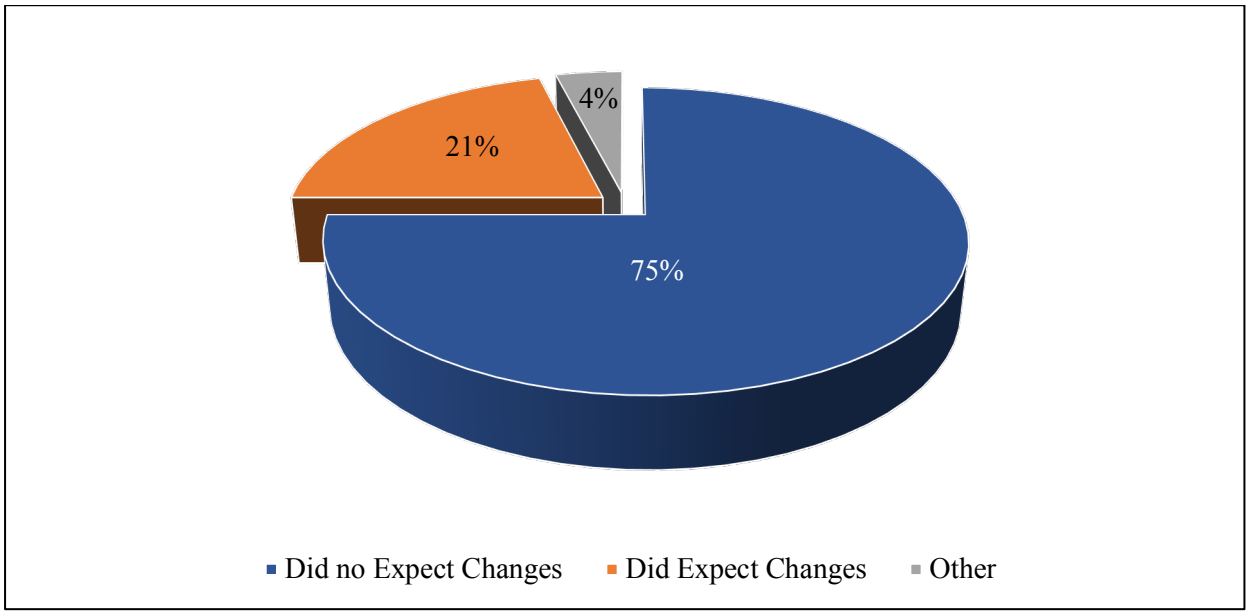
Provinces	**Respondents (N=395)**	**Did not Expect Changes**	**Did expect Changes**	**Other***
Maputo City	35	89%	8%	3%
Maputo	26	54%	39%	7%
Gaza	24	35%	61%	4%
Inhambane	54	47%	52%	1%
C. Delgado	28	51%	47%	2%
Nampula	57	69%	29%	2%
Zambézia	25	79%	11%	10%
Sofala	24	73%	21%	6%
Niassa	33	62%	31%	7%
Manica	62	59%	40%	1%
Tete	27	66%	31%	3%
Average		**62%**	**34%**	**4%**

Source: Author

* Includes 'I do not know' and responses that expressed unwillingness to address the topic.

As shown in Figure 40, of the total respondents across the provinces, a significant majority (about 75 percent) expressed no hope to see significant changes in electricity expansion and improvement of the services in the short to mid-term. Of the remaining respondents, about 21 percent expressed hope and belief that the government was trying to materialize the objective of giving electricity to the entire population, and about 4 percent did not address the topic. Meanwhile, many participants with access to the grid expressed expectations over affordable tariffs of services free of charge.

Figure 40 Participants' Perception of Future Developments in Electricity Distribution



Source: Author

The interview data also revealed that despite localized initiatives to revindicate effective allocation of electricity services, most participants did not see relevance in engaging in dialogue with state energy agencies, mainly EDM. Table 11 shows that, on average, a significant number of participants (about 62%) did interact, at least once, with state energy agencies to address issues

related to access to and quality of electricity services. It also shows that a considerable number of participants (about 34%) never engaged with one of the state's energy agencies, and about 4 percent expressed unwillingness to address the top or provided unresponsive answers.

Table 11 Participants Answer on Interaction with State Energy Agencies

Provinces	**Respondents (N=395)**	**Did Not Interact with Energy Agencies**	**Did Interact with State Energy Agencies**	**Neither/Other***
Maputo City	35	24%	73%	3%
Maputo	26	36%	58%	6%
Gaza	24	29%	67%	4%
Inhambane	54	47%	52%	1%
C. Delgado	28	44%	51%	5%
Nampula	57	32%	65%	3%
Zambézia	25	39%	55%	6%
Sofala	24	18%	74%	8%
Niassa	33	38%	59%	3%
Manica	62	29%	68%	3%
Tete	27	40%	55%	5%
Average		**34%**	**62%**	**4%**

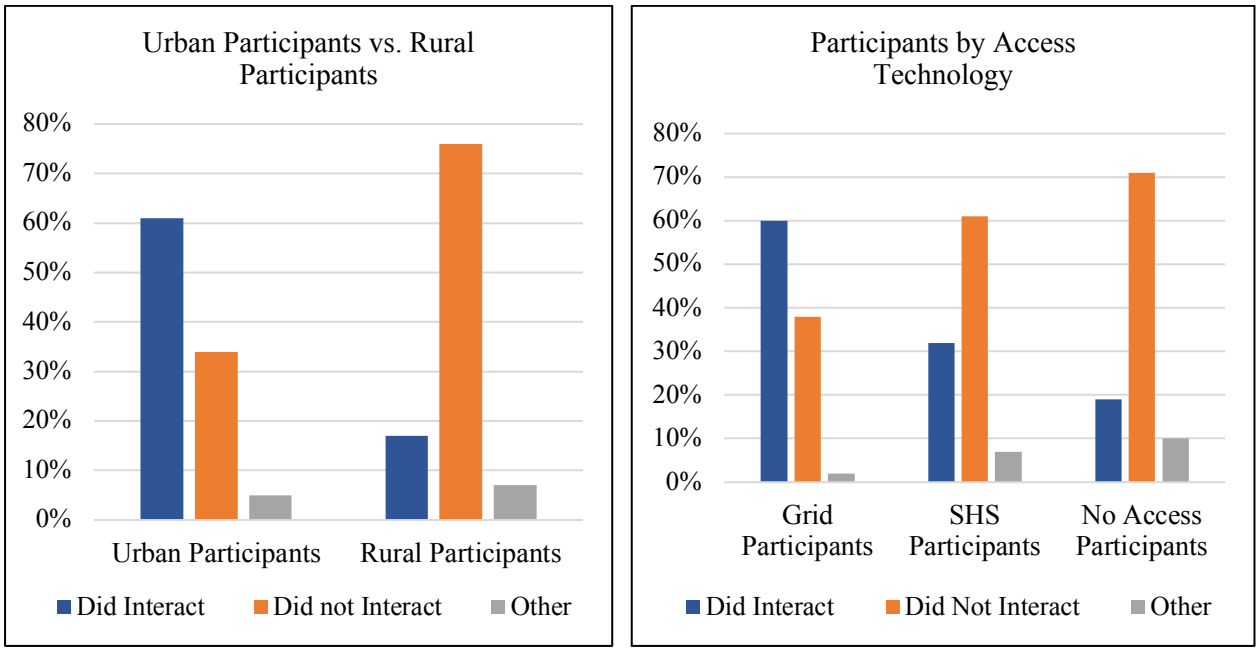
Source: Author

* Includes non-responsive answers and not willing to answer.

The responses across provinces reveal that of the participants who never interacted with any of the energy agencies, a significant majority are rural residents who have access to electricity through SHS and who do not have access to electricity. On the one hand, Figure 41 shows that about 76 percent of rural participants never interacted with state energy agencies, while about 61 of urban participants did. On the other hand, the figure illustrates that about 71 of participants without access to electricity and about 61 percent of participants who have access to electricity

through SHS never interacted with any state energy agency. In Contrast, the figure shows that about 60 percent of the participants with grid connection did interact with at least one state energy agency.

Figure 41 Participants Answer on Interaction with State Energy Agencies (Urban vs. Rural and Participants by Access Technology)



Source: Author

The figures above reveal an interesting pattern that suggest that despite expecting to get connected to electricity one day, many residents in rural areas, particularly those without access to electricity and those connected through SHS. Some testimonies from the interviews express, express, not only, apparently apathy towards the inefficient allocation of electricity, but also an apathy towards the general situation of public goods distribution in the country which resembles

the apparent unwillingness among the citizens in demanding better allocation of public goods through protests. As stated by an urban resident[35] from Chimoio, Manica province:

> "People just started realizing that there is a dictatorship, monopoly, and abuse in the electricity market by the sole manager of the electricity grid, EDM (…) people are now taking local initiatives such as biomass energy to escape such situations (…) in future people will completely abandon EDM."

A resident from Cahique community in Nampula province stated:

> "It has been a year since the government promised to expand electricity to our community, but the government is nowhere to be found (…) as we are poor, and since poor people never get angry, we have nothing to do but keep waiting."

A resident from Napipine[36], Nampula City, stated: "Although I would like to see my community connected with electricity, I expect nothing because I see nothing coming." This testimony may echo the assertion that electrifying rural areas is economically costly and politically non-strategic when the interests deviate from providing electricity access as a fundamental right.

The question one would ask is, what are the expectations and solutions among these residents to satisfy their energy needs? On the one hand, it is a fact that most low-income households use firewood and charcoal for cooking and kerosene for illumination. However, with the popularization of decentralized solutions like Solar PV energy, isolated areas are starting to accept and adopt this solution. However, the biggest concern with the popularization of these

[35] Interviewed in Chimoio, Manica province, on January 5, 2023.
[36] Interviewed in Nampula, Nampula province, on January 22, 2023.

solutions is that they create a substantial black market supplied by low-quality products, which in turn may end up causing a negative perception among end users in the short to mid-term.

During the fieldwork, the author visited some of the largest local markets where "cheap", low quality and unlicensed SHS products are sold in the provinces of Inhambane (southern region), Manica (central region), and Nampula (northern region). It was possible to observe how amid costly existing solutions for electricity connection, low-income households in rural areas opt to buy low-cost and low-quality SHS allegedly manufactured in China, India, and South Africa, that are smuggled into the country through the northern Nacala port and the southern Maputo port.

Six informal vendors – distributed in the number of two by province – were interviewed. The main intention was to assess the vendor's motivations for selling the SHS and the implications of selling low-quality products. Surprisingly, the author received similar feedback from all the respondents. Regarding the motivation to sell the SHS, all the respondents stated that it is an opportunity to help the community while making a profit. As for the question regarding the quality, the respondents were unanimous in expressing that the quality was not a concern for them or the customers, as the most important thing for both parties was the low price.

At this point, this research claims that the poor outcome in electricity expansion may result from mere political choice based on cost-benefit calculus. As discussed earlier, and as Scott & Seth (2013:7), there are political motivations for lower electricity coverage in rural areas, as low population density and high investment cost may mean less political return – in political support or votes like the cases of parts of SSA, Laos, Ethiopia, Zambia, and Vietnam. Ferrall et al. (2021:1) corroborate this notion by stating that the electrification of rural areas is unprofitable and unfeasible, and the government does not address the rural needs, trusting aid support while preferring to focus on urban areas in the meantime.

In summary, this chapter addressed two aspects of state-society relations in electricity access distribution. On the one hand, society's role in the very situation of energy poverty was discussed – while highlighting the citizens' perceptions of the responsibilities over electricity allocation and the citizens' attitudes and actions to improve their energy poverty situation. From what emerged from empirical evidence, although electricity is deemed an essential resource for citizens' well-being, the state's failure to deploy adequate access to electricity has, mainly rural residents, relied on local solutions like access to low-cost and low-quality SHS supplied by informal vendors.

Ultimately, considering the state-society interactions – and particularly the degree of proximity between the society and the state institutions – it can be argued that the society has generally been "unsuccessful" in demanding – through pressure politics (e.g., with recourse to electoral-based threats) – for efficient delivery of public goods, including access to electricity. As from what emerged from the fieldwork, the mobilization force to revindicate better provision of public goods, including electricity, is somehow inexistent, notably in the rural areas. The state, therefore, may not feel significant societal pressure to implement urgent measures to expand electricity (e.g., by promoting decentralized solutions such as SHS). Thus, it cannot be ignored that the ruling elite, in their cost-benefit calculations – amid the state's limited financial resources, might be less "motivated" to introduce urgent reforms (e.g., by the introduction of competition in the market or introduction of fiscal incentives for decentralized solutions such as SHS) to secure efficient and "fair" delivery of electricity access.

CHAPTER 6 – The State and the Solar Home System in Mozambique

The previous Chapter 5 – discussed the elite's political control role and citizens' attitudes towards the state's performance in electricity access distribution in Mozambique. This chapter[37] narrows the debate to assess whether the elite's political control over electricity distribution has a role in the state's reluctance to support the adoption of SHS as a complement to grid extension. It discusses the themes generated from the semi-structured, in-depth interviews with the 30 key informants. Section 6.1 addresses the potential of the SHS as a practical alternative to grid extension; Section 6.2 addresses the state's performance in governing the off-grid sector; and Section 6.3. discusses the potential links between the elite's political control and the developments in the SHS segment. The chapter concludes with a summary of the main discussions across the sections.

6.1 The Potentials of Solar Home Systems

The importance of the SHS as a cost-effective and practical complement to grid expansion throughout rural areas is a consensual matter among the participants. Although some participants expressed concerns about SHS being a non-sustainable solution, while highlighting after-sell services issues, all the respondents recognized its role in helping to target. Furthermore, most participants forecasted that SHS would be more prominent in the country's energy matrix. Senior State Official 1[38] and Scholar 3 stated that SHS is a fast-delivery option. However, proper classification and requirements are needed to allow the importation of products with the capacity

[37] The chapter's content is essentially comprised of a paper published with the GSID forum in September of 2023.
[38] A top-level director at FUNAE. As one of the main faces of the FUNAE's legacy as the "champion" of rural electrification in Mozambique, the respondent's stance is naturally less critical towards states performance in distributing electricity.

to be productive. Senior State Official 2[39] stressed that the ambition of universal access was meaningless without considering mini-grids and SHSs.

Despite the quasi-consensus on the role of the SHS in decreasing the electricity access gap, Scholar 1 pointed out that there is an international agenda aiming at "pushing" developing countries into relying on "palliative" unsustainable solutions like the small SHS kits. This opinion somehow leads to the discussion about ownership of the energy decentralization agenda assumed by the Mozambican state in the 2000s. This dissertation infers that the Mozambican state might have adopted the agenda as a "symbolic" response to the international partner's expectations.

While this concern around the sustainability of the SHS somehow corroborates the counterargument to this chapter – regarding the state's ambition to materialize the mission of expanding the electricity access reliant on grid extension while ignoring the off-grid – it also shows that it is hard to sustain. On the one hand, the claim cannot be manifested in any public channel. On the other hand, from the empirical evidence represented in this chapter (discussed in the following subsections), prominent state officials provide explicit support for the off-grid solutions (including SHS).

6.2 The State and Electricity Distribution

The findings showed divided opinions regarding the state's performance governing the sector. However, the participants are unanimous in pointing out that the state needs to implement a more ambitious approach to unlock the off-grid potential. While state officials were generally "optimistic"

[39] A top-level director at ARENE. The respondent has a vast policymaking experience – of more than 20 years – within MIREME. As ARENE is attempting to become *de facto* regulator of the sector, the institution, somehow, has a critical stance towards the state's "predominance" in the sector. Therefore, the respondent may have a "balanced" stance towards the state's performance in distributing electricity.

about the state's efforts, other participants implied that the state should deploy the right policy to attract the private sector and promote the development of alternative solutions, like decentralized SHS.

Senior State Official 2, the Government was exploring new alternatives to accelerate electricity access, including densification and expansion, which involve maximizing the combination of existing electricity infrastructures and other possibilities like off-grid. Senior State Official 3[40] stressed that the several initiatives by state energy agencies (EDM and FUNAE) in partnership with donors, development programs, and the private sector are evidence of the state's commitment to expanding access without favoritism. Nevertheless, while the partnership with donors and development agencies does not necessarily indicate that the state is open to new players in the market, a contrary view by a non-state official indicates difficulties in entering the electricity supply market.

Development Program Official 1 pointed out that the state energy agencies currently work as islands, therefore misaligned, and stressed that:

> "The exclusion of relevant actors in defining the sector's priorities leads to unpredictability of future developments and limits the private sector's ability to invest in access expansion."

While some would argue that this results from generalized institutional miscoordination, others, like Eberhard and Godinho (2017), consider that it results from deliberately excluding other relevant actors in the market. Additionally, where the state invested effort to expand access

[40] A top level at MIREME. Has over 20 years of experience in policy-making. Being one of the key individuals behind the implementation of policies for expanding electricity, the respondent may view the state's electricity distribution efforts positively.

throughout rural areas, it has done so mainly through the state agencies FUNAE and EDM. Thus, it is somehow comprehensive to claim that the state has a "quasi-monopolistic" ambition to expand electricity access (Power and Kirshner 2019: 500-509; Salite, Cotton, and Kirshner 2020:2).

The narrowed discussion into off-grid and SHS led to the following findings: (i) electricity expansion is seen as the state's social responsibility, and (ii) incentives are necessary; however, they are not among the state's policy priorities, as discussed in the following subsections.

Expanding electricity is associated with the state's social responsibility as it is perceived that the state's presence in the sector is crucial to ensure that all Mozambicans can access affordable energy services. The interviews with urban and rural residents confirm that, in many cases, the state is seen as the only alternative through which the public can access services. This perception corroborates Sumich's (2010:684) view on patrimonial and clientelist networks in African societies, as discussed in Section 3. In fact, like any other strategic social services (e.g., water, transportation, health), the state traditionally dominated the supply of energy services. If "expanding electricity access being state's social responsibility" is to be taken seriously, then it can be argued that the state failed to protect the most vulnerable group – the rural, isolated households.

While the state's dominance in the sector may be a natural consequence of the sector's history, a divide in opinion exists on the state's willingness to liberalize the policymaking process and the market. Some officials consider decentralization to be a slow but assured process. In contrast, others expect the state to be more effective in addressing the lack of access and see a vast potential in the state sharing the burden of expanding access with the private sector. Senior State Official 1 emphasized that the state's dominance of the off-grid supply is a sign that the state is trying to ensure a leader to oversee the sector.

On the other hand, Development Program Official 1 considered that MIREME has a non-progressive discourse regarding the involvement of the private sector and stated that “the state should create the right policy conditions to attract the private sector to operate in the electricity expansion market instead of playing regulator and operator."

The idea that expanding access is one of the state’s social responsibilities is salient in both literature (Power and Kirshner, 2019) and the state officials’ “everyday political discourse” on distributing public goods. Considering that the distribution of electricity access is significantly irregular and the gap between urban and rural areas considerable, one would ask if the rural public was failing to put pressure on the effective delivery of electricity services or if the state has no sufficient motivation to perform an adequate supply of the service. As discussed in Chapter 5, evidence from the interviews with the rural residents suggests that political pressure is not among the alternative measures to secure access to electricity.

Reduction in VAT and import duties on SHS are among the most disputed issues in the debate on the off-grid electrification policy. The findings suggest that the measures necessary to expand access, priority, and the mechanism of its implementation are non-consensual aspects among the informants. On the one hand, state officials defended the idea that the issue deserves careful cost-benefit examination. On the other hand, the informants from private companies and development agencies claimed that it is viable and advocated for immediate implementation – as demonstrated in two market studies by Hodgkinson and Smeshko (2021) and GreenLight (2019).

Senior State Official 3 shared the position stated above and pointed out that the MIREME was working, in consultation with other relevant actors, on adopting specific regulations for the off-grid sector, including incentives, and stated:

"The government is considering deployment of fiscal and financial incentives. However, its implementation needs well-justified arguments. The implementation also depends on the level of engagement with the Ministry of Finance. The Ministry of Finance needs to understand the benefits under the concession of fiscal and financial benefits for SHSs."

The local private sector in Mozambique has been considered unproductive and essentially associated with politically exposed persons (PEPs) in pursuit of business opportunities. This statement indicates the recognition of the presence of political actors in the sector intending to profit through the state. Through the Mozambique National Economic Association Confederation (CTA), the private sector has successfully persuaded the government to adopt policies favoring subsidies. However, this has not been the case with the SHS. While the government never accommodated any demand for fiscal incentives for SHS, no official reason for the stance is publicly known.

Some participants indicated that the government might not consider fiscal incentives to SHS a win-win situation, as it would block the government from earning tax income. Senior State Official 4[41] described the local private sector as a "lobby club" – companies with the explicit intention of taking advantage of tax reductions to minimize investment. As Senior State Official 1 stated, "the government needs additional improvements to create a proper environment, particularly concerning institutional, inter-agency coordination." He claimed that the issue of incentives deserves careful examination before its implementation. In a clear indication that

[41] A director at EDM. As EDM has the been the main player in the distribution of electricity in Mozambique, the institution has played a crucial role in the current situation of the sector. The respondent has been acting as director for about 15 years while dealing with expansion projects as well as *de facto* policymaking in the sector. Therefore, the respondent may have a positive stance towards the state's performance in distribution electricity.

implementation of incentives to expand SHSs is not currently among the Government's policy priorities, Senior State Official 1 stated that:

> "The private sector's performance in the off-grid market is still not conducive to deploying incentives. A compelling argument on why the Government should provide incentives should be presented."

While state officials tend to be more careful on the issue of incentives, other stakeholders seem to believe that incentives are necessary and urgent. Consultant 1, for example, pointed out that the incentives are the only way SDG#7 can be met. On the other hand, Scholar 2 claimed that the Government has a very short-term vision of incentives to attract the private sector – by emphasizing too much tax income losses – and suggests that they should be seen as a process conducive to a more significant fiscal base in the long term.

On the other angle, some respondents have a quasi-neutral stance. Private Company Official 1, for example, thinks that the Government of Mozambique should consider incentives for productive infrastructure rather than small systems (e.g., the one intended for illumination or radio – a clear allusion to small SHS kits). On the other hand, Scholar 3 suggests that the incentive package should follow result-based compensation criteria – where investors should be granted exemption based on a defined number of connections. Is the government reluctant to implement incentives on SHS because it is an unsustainable solution? Or because it will result in tax income loss?

Both questions somehow corroborate the counterargument to this research's argument – and both seem somehow inconsistent in explaining the state's skeptical stance towards incentives to SHS. On the one hand, disregarding incentives because of a potential loss on tax income is

contradicting, as more access to electricity also means more economic and commercial activity, which may increase the fiscal base, as claimed by scholar 2. On the other hand, disregarding incentives to SHS because it represents a non-sustainable solution is also contradicting because, although some small-size kits cannot allow productive use, they make an impact in people's lives through access to information (TV, radio) and night education and even the government. Furthermore, considering whether SHS is adequate in a country with about 40 percent access to electricity and a state struggling to expand the grid is highly contradictory.

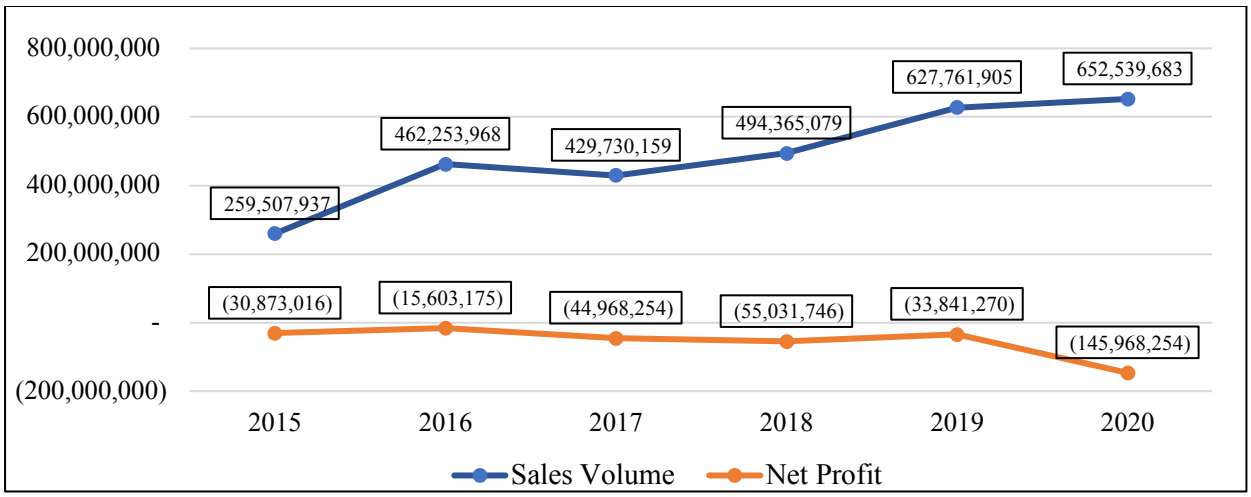
Another indication is that the fiscal base argument is unlikely supported by the government's approval of subsidies for new on-grid consumers. The following case suggests the Government's decision to eliminate the on-grid connection fee and that the state's stance on VAT and import duties on SHS results from a calculated choice. One of the salient examples of double standards when it comes to providing incentives in the energy sector is the paradoxical situation involving the grid and off-grid sectors. On the one hand, the grid sector has benefited from significant support from the state energy agencies, including grants and subsidies. The following case shows how some government stances towards on-grid solutions raise notions that the sector is politicized.

On December 11, 2020, President Filipe Nyusi announced, in a public address, the elimination of the electricity connection fee by the state-owned EDM in a gesture that Filipe Nyusi described as a "Christmas gift," he said that the government was fulfilling a promise to low-income households (Further Africa, 2020; Club of Mozambique, 2020). The rationale behind the decision was to eliminate the financial barriers to electricity access among poor households and allow the households to save about 47 USD (Presidency of the Republic of Mozambique, 2020). On the same occasion, the EDM's financial director, Francisco Inroga, pointed out that universal access would

be materialized through EDM – on-grid and FUNAE – off-grid (Club of Mozambique, 2020; Further Africa, 2020).

As the incentive on on-grid is intended to boost connections and connect about 2 million households by 2024, the SHS segment (alone – under the scenario of VAT and import duties 5-year holiday) was expected to target 2.5 million households by 2030 (Hodgkinson and Smeshko 2021; ALER, 2021). On the other hand, while incentives on SHS are seen, mainly on the state side, as a financially costly option – potential tax income loss from VAT and import cut, the preference for on-grid (and EDM) also means an extra burden to the already financially "broken" EDM. Figure 42, shows EDM's negative net profit trend for the period 2015-2020.

Figure 42 EDM's Sales Volume vs Net Profit in USD (2015-2020)



Source: Author, based on EDM (2021, 2023)

Although eliminating the connection fee may help expand access by targeting low-income on-grid households, it probably will not solve the entire access issue. Furthermore, the state's inclination for on-grid solutions suggests its ambition to materialize universal access through EDM

and FUNAE. Furthermore, while ignoring the SHS segment, the state's decision to stimulate the on-grid sector may raise questions on energy justice.

6.3 Political Control, Electricity Distribution, and Solar Home Systems

The testimonies speak to both corroboration and refutation of a significant role of politicization of electricity distribution. As Soares et al. (2023) suggest, political factors (including planning, regulation, definition of priority, and strategy) are significant factors in determining the outcomes of electricity expansion. A state senior official[42] claimed that "…the reality is that the technical opinion for the development of the sector is facing huge political barriers." Another state official[43] claimed – in allusion to how unconfessed political interests are hindering the sector – that "… ARENE, the regulator, is not even consulted to decide on some of the critical regulatory issues in the sector…" and added that "… there is a mentality of not doing and not letting anyone do…"

Speaking directly of the possible link between the politicization of electricity distribution and the state's skeptical stance on incentives to SHS, Senior State Official 1 stated that politicization, rent-seeking, and clientelism may be present; however, the state does not decide the actions of the private sector. The respondent further stressed that despite possible interests in using the sector to benefit a few, the targets of electricity expansion have little association with political questions and that the Government's criteria are well-defined and precise. While the Senior State Official's claims seem to have logical merit, the reality of electricity expansion, especially throughout the rural areas,

[42] Interviewed in Maputo, on October 8, 2021. Has large experience in energy regulation.
[43] Interviewed in Maputo, on October 12, 2021. Has large experience in energy regulation.

suggests a different understanding – that the motivations for policy formulations are not always the same as the policy implementation.

Senior State Official 2 highlighted the importance of having an independent regulator, a state-oriented mindset at the bureaucratic level for the energy sector, and a clear national orientation. The respondent also addressed the "chronic" political pressures on the sector's bureaucracy. As he pointed out, the reality in the sector is that technical opinion faces a colossal political barrier. Scholar 2 added that EDM is one of the most significant barriers to the private sector because it brings strategic, technical, and political problems to the industry due to its history as the "pioneer" of the energy sector. Scholar 1 went further in highlighting that:

> "There are cartels in the energy sector. A rigid group of people in the sector is keen to keep the old business fashion. It is not a question of politics. Instead of calling for political pressure, I would describe it as corruption in the sector, which explains the conflict of interest in which some state officials are involved."

Despite hesitation in addressing the topics related to politicization, rent-seeking, and clientelist interests in the energy sector in Mozambique, some respondents indicated that there are possible clientelist networks in the energy sector. Regarding possible links between state clientelism and weak expansion of SHS, a few informants expressed that it is not manifested and, therefore, is unlikely. For example, Senior State Official 3 suggested that it is far easier to accept that financial constraints are a significant barrier to electricity expansion in rural Mozambique rather than clientelist interests. However, the same official recognizes that political pressure is a significant challenge to the policymaking process in the sector. In addressing the question of who defines the priorities in the sector and what interests are involved, the respondent stated that the

lack of precise regulation is what makes the sector's priorities confusing and with limited participation of technical opinion and recognizes that breaking the referred pollical barrier represents a significant challenge to the regulator of the sector.

As discussed earlier, a few opinions (such as the testimonies from Senior State Official 1 and Development Program Official 1) indicate that the state expects to remain the "champion" of electricity expansion while minimizing participation in the participation of private players. The state-owned FUNAE is competing against the private sector in the off-grid market while contradicting its mission of promoting market expansion through financial and technical assistance to local initiatives. However, Scholar 4 suggested that there is a generalized and wrong perception that the state is always seeking to constrain the private sector and monopolize business opportunities – and used the example of the affordability of state water services to justify social commitment by the state. While the affordability of state services should not be ignored, it is also essential to remember that the reliability of state services is also a significant issue in the country.

The following statements corroborate the research's inference on the role of the elite's political control influence over the electricity distribution mechanisms. State Official 5 pointed out that powerful politicians with easy access to business opportunities in the sector must understand that holding on to the old business model – based mainly on on-grid solutions – will not lead to the awaited optimal electricity coverage. According to him, the presence of influential political figures in the sector's businesses is a significant issue. Such powerful politicians have well-established business networks – with the state – while doing little for the benefit of the general public. Consultant 3 pointed out that clientelist networks and political pressures on the bureaucrats are more visible in the on-grid projects and less in the off-grid projects. It is essential to remember that, regardless of the sector in consideration, clientelist networks are made through informal networks.

In summary, this chapter addressed the core element of this research's argument: the politicization of electricity distribution and its potential role in the state's skeptical stance toward adopting and expanding SHSs. The evidence derived speaks to the existence and inexistence of mechanisms linking the elite's political control over the mechanisms of electricity distribution and the state's stance towards the SHS segment. Essentially, despite the divergence of positions, the data indicates a possible connection between the elite's political control and the state's reluctance to approve incentives to SHS. Therefore, the elite's political control and economic interests – based on utilizing the state-led electricity distribution system should not be ruled out as a factor behind the state's reluctance to support the expansion of SHS. The logic here is that on-grid and off-grid (particularly the SHS segment) are different sectors in terms of control. While controlling a monopolized on-grid system for economic and political gains is relatively easy, the relatively decentralized SHS suggests otherwise.

CHAPTER 7 – CONCLUSIONS

This research assessed the factors behind the low electricity access distribution and the state's role in promoting SHS in Mozambique. The assessment focused on exploring state-society relations factors of electricity access distribution to answer two questions: (i) What explains the persistent low levels of electricity access in Mozambique? and (ii) Why the SHS segment has not received much governmental attention in Mozambique?

The dissertation adopted a political perspective in complement to past existing perspectives. Extant perspectives offer relevant insights to explain the persisting energy poverty many developing countries face: (i) economic perspective emphasizes the role of levels of economic development, economic shocks, fuel dependency, and availability of financial resources to invest in costly electricity expansion projects; (ii) socioeconomic perspective emphasizes poverty levels, income inequality, and demographic factors to explain why some countries managed relative success in expanding electricity access while others struggle; (iii) institutional perspective emphasizes institutional capacity, government interests, state capacity; and (iv) political perspective emphasizes differences in political regimes, political stability, and the role of the state in the outcomes of electricity distribution.

The reason for complementing these perspectives is that they miss critical puzzles to which many developing countries, especially SSA countries, can relate. The economic perspective cannot explain why some countries with "struggling" economies managed relatively well in expanding electricity while others with relatively stable economies struggled. The socioeconomic perspective cannot explain why some countries with considerable income inequality and poverty levels managed to develop large off-grid projects (e.g., Bangladesh, Kenya). The institutional perspective

cannot explain why countries with relatively poor institutional performance, such as government effectiveness and regulatory quality, significantly expanded the distribution of electricity access. The extant political perspective is insufficient to explain why countries considered politically unstable managed relative success in expanding electricity while others that perform relatively better failed to do so.

This dissertation argued that the elite's political control and the politicization of electricity access distribution favors wealth accumulation and political advantage to some ruling elites while constraining the state's ability to deploy effective policy. Also, the dissertation argued that society's stance toward the outcomes of public good distribution plays a significant role. The citizens' stance on the state's distribution of public goods may determine the degree of priority ruling elites give to deploy public goods effectively.

The need to scrutinize the research's argument led to two separate rounds of fieldwork in Mozambique. On the one hand, 395 interviews with urban and rural residents with and without access to electricity distributed throughout the 11 provinces of Mozambique to gather the participants' perceptions and sentiments concerning (i) the importance of access to electricity in the participants' lives, (ii) the responsibilities over electricity distribution, (iii) paces for dialogue with the state and the degree of the participant's involvement in state energy initiatives, and (iv) the participant's expectations about future developments in expanding access to electricity. The interviews were necessary to assess variations in perceptions and sentiments regarding the state energy agencies' performance in expanding electricity access and the extent of the citizens' interactions with the relevant state energy agency and local solutions to access electricity.

After verifying the extent to which this dissertation explained the patterns and how the extant perspectives did, the following conclusions emerged:

(I) While expectations over electricity access vary between urban and rural residents, ensuring affordable and reliable access to electricity is vital for the citizens. The residents' expectations in accessing electricity in the context of a monopolized supply chain may be subject to be leveraged for political gain by those who control such services.

(II) The state in Mozambique is at the center of people's expectations to access electricity, regardless of the timing of the service allocation, its reliability, and the existing perception of favoritism towards one group to the detriment of others. In a competitive political environment – where strategic resources are at the center of ambition for power and policy control – electricity access distribution may be used to maintain power while distributing compensations to supporters.

(III) Although the state is seen as the "savior" of electricity access, its failure to provide the service has not faced grievances and challenges from the citizens' side. Also, non-targeted residents, particularly rural residents, relied on local – affordable, temporary solutions like SHS access to satisfy part of their energy needs.

On the other hand, 30 interviews with representatives from the state energy agencies, private companies – distributors of SHS, development programs, scholars, and consultants in Mozambique to explore the respondents' views on (i) the potential of the SHS as a practical alternative to grid expansion, (ii) the state's performance in governing the off-grid sector, and (iii) political economy interests involved in the expansion of electricity access. Themes from the testimonies were interpreted to identify patterns – which were checked against theory and secondary data to form the following conclusions:

(I) Despite its weakness in sustainability, SHS is generally widely recognized as the most cost-effective and practical alternative to grid extension, particularly in rural areas where energy poverty is most pronounced.

(II) Elite's political control and economic interests – based on utilizing the state-led electricity distribution system – may affect how the state prioritizes electricity distribution and should not be ruled out as a factor behind the state's reluctance to support the expansion of SHS.

While the analytical strategies applied to the dissertation cannot fully assure consistency of the conclusions with the vast spectrum of perception of the state's performance in the distribution of electricity in Mozambique, they helped to assess unique insights from key stakeholders of the sector and the very objects of the persisting energy poverty, particularly rural residents. Also, as the interviews addressed political aspects that are challenging to expose, the evidence cannot be deemed entirely accurate due to the bias respondents' testimonies may convey.

The dissertation contributes to the debate on the factors of the persisting energy poverty, unequal distribution of electricity access, and the state's, particularly in SSA. It demarcates from the extant perspective by suggesting a new avenue to address the persistent issue of energy poverty by emphasizing the role of the elite's political control and the nature of the interactions between the state and society. In other words, it adds new conditions and mechanisms that help explain why some developing countries struggle to expand access to electricity. Furthermore, the discussion on state-society relations provides relevant insights on possible clientelist and rent distribution networks that may help interpret society's attitude towards the outcomes of the distribution of public goods. This means that future studies can build from this research to investigate society's

role in the outcomes of electricity access in Mozambique and developing countries that share commonalities with Mozambique.

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