

# The Problem with Problematising Rural Electrification

Policy in Kenya and Rwanda on Rural Electrification through  
a WPR approach



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# Abstract

The modernisation of the Global South is a complex and often overwhelming task. However, one of the most cross-cutting issues is often overlooked. The arena of energy poverty – specifically electric poverty in rural areas and how state policies tackle this problem - is one that often discussed in the wider development discourse. By answering the questions ‘How is the problem of access to electricity represented in the Kenyan and the Rwandan energy policies, respectively?’ and ‘Is there an evident divergence and/ or convergence in strategies to enhance energy access in Rwanda and Kenya’s rural electrification policies?’ this thesis attempts to understand how states ‘problematise’ and deal with electric poverty. Moreover, Bacchi’s (2009) methodological – analytical WPR approach enables the energy policies of the selected cases of Rwanda and Kenya to be uniquely deconstructed from its underlying assumptions in a comparative case study. The theoretical foundations of Halperin and Heath’s post-structuralism, emphasising McDonalds (2009) ‘problematization’ of issues by states’ exploitation of power dynamics in a neoliberal setting, allows for a detailed comparison of policy statements. The analysis suggests that the similar but diverging production of discourses by the states documents has created a distinction between the states in their long-term goals of rural electrification.

*Key words:*

Electric Poverty, WPR Approach, Rwanda, Kenya, Rural Electrification

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# List of Abbreviations and Acronyms

EAC	East African Community
EDRPS II	Economic Development and Poverty Reduction Strategy II
GoK	Government of Kenya
GoR	Government of Rwanda
HR	Human Rights
IEA	International Energy Agency
IEG	Independent Evaluation Group
IPP	Independent Power Production
KP	Kenya Power
PPP	Public Private Production
REG	Rwanda Energy Group
SDG	Sustainable Development Goals
SE4ALL	Sustainable development for ALL
SSA	Sub-Saharan Africa
UDHR	Universal Declaration of Human Rights
WB	World Bank
WPR	What's the Problem Represented to Be?

# 1 Introduction

One of the fundamental aspects of attaining development as outlined by the Sustainable Development Goals (SDGs) is access to energy, but it is often overlooked. As one of the most cross-cutting and interrelated issues of development work in the Global South. The concept of energy poverty is thusly, the umbrella issue discussed throughout this thesis. In terms of the literature, energy poverty has been conceptualised in many different ways, but most relevant to this paper is specifically rural electric poverty and the Human Rights (HR) conceptualisation. However, the role of access in its contribution to socio-economic development is emphasized by White (2002) and the Governments of Rwanda or Kenya. The purpose is thus, to identify how the Kenyan and Rwandan Governments represent the issue of electric poverty and access in rural areas respectively. Divergence and convergences are detailed throughout to indicate the diverse and complex nature of development work. Utilising Carol Bacchi's (2009) methodological- analytical framework uniquely permits an in-depth exploration of the way in which these representations shape resource distribution and discourse itself. Ultimately, this thesis highlights similarities and differences in structural and contextual matters in terms of issue representation in their respective energy policies.

## 1.1 Research Problem, Research Aim and Research Question

The ability to access and utilise electricity is a luxury which many of us takes for granted. Not only in terms of instant access to information, communication and social media platforms, but to complete mundane domestic tasks such as cooking. The ability to be active within the home after the sunset is not a reality for millions, especially in Sub-Saharan Africa. Since the inception of the SDGs, energy has gained recognition as an import part of the development puzzle. Both Rwanda and Kenya are involved in some capacity in achieving Goal 7: Affordable and Clean Energy (UNDP:2017).

Rwanda and Kenya are attempting to reach 100% access to electricity nationwide by 2020 and 2023 respectively. The policies and strategic plans to achieve this are a focal point to their development. These countries have employed different structures to address access to energy; these structures can be characterised as hybrid schemes as they both have on and off-grid programs. The focus diverges in terms of the urban/ rural divide and the role/ strength of the state compared with

that of private actors to create the multifaceted picture of electric poverty policies in Rwanda and Kenya.

The research problem of this thesis is about how state policies deal with energy poverty - more specifically, policies on rural electrification in Rwanda and Kenya. According to the World Bank (WB, 2017) 29% of the Rwandan population has access to electricity with those dwelling rurally only constituting 18% which is 2,160,000 people. In contrast, 56% of the Kenyan population has access, 40% of which live in rural areas a counting for 19,600,000 citizens (World Bank, 2017). Consequently, the specific type of energy poverty dealt with throughout this thesis is electric poverty. Electric poverty encapsulates activities which require access to an energy supply. It is a specific term used to describe and analyse activities such as cooking, education, health services and food production. In academic terms electricity poverty refers to the level of energy consumption that is insufficient to meet basic needs (Gonzalez-Eguino, 2015: 379).

The following study attempts to analyse the issue of energy poverty, but more specifically on access to electricity in both rural Rwanda and Kenya. By further delimiting the question to focus on policy documents – their assumptions, terms of reference and use of language – a detailed analysis and comparison of the Rwandan and Kenyan governments’ respective approach to the problem can be attempted.

*How is the problem of rural access to electricity represented in the Kenyan and the Rwandan energy policies, respectively?*

It is not sufficient only to ask how the issue of electrical poverty is represented in policy. To further engage and understand the issue, one must look at not only the similarities, but also the differences. Hence, the following sub-question will also be explored.

*Is there an evident divergence and/ or convergence in strategies to enhance energy access in Rwanda and Kenya’s rural electrification policies?*

## 1.2 Relevance and Delimitations

Energy poverty occurs mainly in the Global South. This includes, Africa, Latin America and Asia and the Middle East. While, given their development focus and keen interest in rural electrification, both Asia and Africa offer useful case-study material, the abundance of data available in terms of both statistics and text-based information in Africa makes it the most attractive candidate. This can be attributed to the sheer number of development projects, initiatives and the SDGs heavily aimed at this continent. The East African Community (EAC) includes

Tanzania, Rwanda, Uganda, Burundi, Kenya and South Sudan. One of the most researched and documented areas in Africa. The easily accessible information on this region made it a simple, yet informed delimitation. Moreover, the high traffic of donors and commitment to the SDGs reinforce its relevance. The cases of Rwanda and Kenya were specifically chosen because of their data abundance, but also the contrasting structures of their electrification programs and strategies. For clarity, rural access to energy in scholarly work predominately refers to access to electricity specifically. Thus, this thesis follows these lines in looking at rural electric poverty specifically under the broader umbrella of energy poverty.

### 1.3 Conceptual Overview

The notion of energy as a HR is not one often discussed, but when carefully analysing HR documentation, it seems an implicit part of fulfilling its goals. Below, the binding United Nations (UN) Charter adopted in 1945 by all 192-member states Article 55 is one example of how language evokes the importance of energy access without explicit mention.

*(a) higher standards of living, full employment and conditions of economic and social progress and development; (b) solutions of international economic, social, health, and related problems; and international cultural and educational cooperation; and (c) universal respect for, and observance of, human rights and fundamental freedoms for all without distinctions as to race, sex, language, or religion.*

(As seen in Bradbrook, Gardam and Cormier, 2008:540)

Similarly, the Universal Declaration of Human Rights (UDHR) adopted by the General Assembly in 1948 touches on the issue of energy. Article 25 of the Declaration states that:

*'[e]veryone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services...'*

(Bradbrook, Gardam and Cormier, 2008:540).

Although energy is not explicitly listed or stated in these existing obligations, the term 'including' according to Bradbrook, Gardam and Cormier (2008:539) indicates that the right comprising an adequate standard of living are not listed in full here. Without modern energy services, access to food, clothing, housing and

medical care is severely limited. Hence, access to modern energy was one of the unlisted aspects to the UDHR. Likewise, the UN Charter does not explicitly reference energy, but to achieve the previously mentioned 'purposes', access to modern energy services is central (Bradbrook, Gardam and Cormier, 2008:539). Therefore, it can be deduced that access to modern energy is an inherent and integral feature of satisfying HR.

These sentiments are evident in the selected policy documents of the Rwandan and Kenyan Governments. In the case of Kenya, the implementation of the new Constitution in 2010 saw the energy and petroleum sector take on a new, more central role in the national policy to further catalyse economic growth. Section 1.3 'Legal and Regulatory Framework of the National policy' explicitly states:

*It is necessary to review and align the energy and petroleum sector policy, legal and regulatory framework with the provisions, spirit and aspirations of the Constitution*

(Ministry of Energy and Petroleum Kenya, 2010:19)

Here, one can deduce that the Government of Kenya (GoK) places high value on the impact energy access has on the lives of its citizens. Similarly, Rwanda expresses this commitment to enhancing the living standards of its citizens by expanding its energy policy. Specifically, this is exemplified in Section 2.3 'Overarching Policy Goals', which mention Rwanda's status as a signatory on the UN Sustainable Energy for All Initiative (SE4ALL). Thus, the concept of energy access to as a HR is a prominent underlying theme throughout the selected cases.

The universality of this issue calls into question the uneven focus of classic development strategies. In practical terms, this is physically manifested into highly focused areas of development, mainly in densely populated areas such as urban centres. Unfortunately, the less populated rural communities are marginalised and excluded from such development opportunities. This may occur for a variety of reasons including cost but undermines the universality of HR. This disparity is often conceptualised as the rural/ urban divide. The existence of the rural/ urban divide reinforces not only the importance of a holistic approach to HR, but to development work itself. Moreover, the intrinsic nature and follow-on effects of this topic are clear, not only in its conceptualisation, but also its approach and implementation.

## 1.4 Thesis Outline

Section one has presented an overview of the thesis followed by the research problem and questions. Additionally, the relevance, delimitations and a HR conceptualisation completed the first chapter. Section two introduces the contextual background on the cases of Rwanda and Kenya in conjunction with the scholarly debates on energy poverty and the SDGs. Chapters three and four delve into the theoretical and methodological frameworks which also serve as the groundings for the analysis in Section five. Ultimately, Section six will summarise the findings related to the research questions and indicate paths for further research.

## 2 Setting the Scene

This section will present the issue of energy poverty terms of the academic debate while also contextualising it in both the Rwandan and Kenyan cases. This section will encompass three main areas. Firstly, it will present the empirical cases, which will be related to previous scholarly literature on energy poverty as the second area. Finally, the aforementioned materials and debates will be placed in the context of how the SDGs tackle energy poverty. This reasserts its relevance to the development field. The unconventional layout of this section is designed to highlight the interconnectedness of this issue on all three fronts, while further enhancing the context of the research. Thus, the scene setting refers to both the academic and empirical materials.

### 2.1 Energy Poverty and Development

1.1 billion people are estimated to have zero access to electricity in Africa, which is 14% of the world's population (IEA, 2017). Considering that the WB (2016) reports that only 42% of Sub-Saharan Africa (SSA) has access to electricity, this leaves 590 million people without access to modern energy. Hence, the ability to complete daily domestic tasks is hindered by a lack of access to essential energy services for cooking, lighting, heating, brewing, firing, boiling, ironing and operating electric appliances (MININFRA, 2015:8). These constraints push families to use dangerous alternatives such as kerosene lights which have proven harmful health effects and inflated prices. This is considered well below the 'normative western' standard experienced by those in the Global North. This evokes a sense of injustice and recalls the conceptualisation of energy access as a HR by Bradbrook, Gardam and Cormier (2008). It is important to acknowledge that access to electricity in SSA is increasing, although slow, it maintains positive projections. Over 200 million people have obtained access since 2000, which is a 43% increase, however the International Energy Agency (IEA, 2019) emphasises that progress has been uneven.

Energy poverty in the eyes of the European Union (EU) energy poverty observatory is a highly distinct form of poverty. It is commonly associated with a range of side effects for people's health and wellbeing (EU Energy Poverty Observatory, 2019). Furthermore, the World Economic Forum (2018) mentions that access to energy is fundamental to improving quality of life and central to economic development. Toman (2017) emphasises this point by pointing out the

empirical evidence linking electrification to modernisation and economic development.

Continuous and reliable access to electricity is a key aspect of modern society as it not only increases productivity and connectivity, but is embedded in modern food production, health care, education and housing. Interestingly, such a specific form of poverty such as energy poverty is noted to have follow-on or indirect effects in other seemingly unrelated policies areas. This includes areas such as health, environment and productivity. Societal services, such as the ones previously mentioned are often marginalised or non-existent in states and communities which have no or limited access to energy (World Bank, 2010). Seeing as these services rely on access to energy for delivery, the follow-on effect of limited energy access is further problematised not as a stand-alone issue but an integral aspect of development. This links back to the HR conceptualization as without energy, other HR cannot be fully realised.

Another way to interpret and understand the complex nature of energy poverty, one can look to the Multidimensional Poverty Index by the United Nations Development Program (UNDP, 2017). The application of such an index allows a specific, relevant and appropriate tool to measure poverty in the Global South. This measure does not only rely on income-based poverty alone but captures the deprivations that an individual faces' concurrently. Fields such as education, health and living standards are all included in the index. Rwanda in 2017 had an Intensity of Deprivation measure of 47.7%, while Kenya stood at 46% (UNDP, 2017). This follow- on effect is explicitly acknowledged by the Rwandan and Kenyan Governments.

However, there is as yet no universal definition of energy poverty. It has been commonly defined as a lack of access to modern energy services. To further refine this concept one can look to the World Energy Outlook special report (IEA, 2014:27-28) where they define 'modern energy access' on four different aspects:

- (a) Household access to a minimum level of electricity.*
- (b) Household access to safer and more sustainable (i.e. minimum harmful effects on health and the environment as possible) cooking and heating fuels and stoves.*
- (c) Access to modern energy that enables productive economic activity, e.g. mechanical power for agriculture, textile and other industries.*
- (d) Access to modern energy for public services, e.g. electricity for health facilities, schools and street lighting.*

IEA (2014:27-28)

The basic and common features of energy poverty can be derived from this definition. For the purpose of this paper, when discussing 'access' the main focus is on the household level. This is reflective of the first two characteristics

revolving around the household. Additionally, when exploring household access the World Energy Outlook Special Report emphasises:

*'A household having access to electricity and to a relatively clean, safe means of cooking. A lack of access to such services often results in households relying on expensive, inefficient and hazardous alternatives.*

(IEA,2014:28)

Access to electricity is intrinsically linked with social and economic development. White (2002) notes that from the very first kilowatt-hours used, an evident and direct benefit can be seen in human development as shown by the Human Development Index (See Appendix 1). Both Kenyan and Rwandan policy documents reflect this. Kenya's policy draws a direct causal link between electricity access and economic growth from 2004 to 2014 (Ministry of Energy and Petroleum Kenya, 2014:68).

White (2002) goes on to describe the relationship between access to electricity and human development. Households can typically spend 20-25% of their income on kerosene lights (IEA, 2014:27). This recalls Toman's (2017) productivity paradox. Even though the cost of joining a grid or buying more fuel-efficient lights in the long term are more cost effective, the initial capital outlay required is a barrier to low-income rural and urban communities. Thus, for large scale diffusion of the technology to occur, the cost must be mitigated through over time or by an intervening body such as the government or a large investor such as the WB. The IEA reports that incandescent bulbs are 600-times more polluting than that from compact fluorescent and kerosene lights (IEA, 2014:28). Alarming, of the total 4.3 million premature deaths each year, 600 000 which occur in Africa are attributed to household air pollution from traditional solid fuels burned for lighting. This includes fuelwood, charcoal, biomass and kerosene (WHO, 2014).

McDonald (2009) fascinatingly presents the concept of 'electric capitalism' in the wake of energy poverty and development as the new form of imperialism. Conceptually, the poorest of a population are deemed unprofitable and the citizens recategorized as customers. A critical sentiment, but true when discussing the cases of both Rwanda and Kenya. Those left off the grid by electric capitalism have attempted to be taken under the wing of entrepreneurs and Independent Power Producers (IPPs) supported by donors. This simultaneously builds a larger market for off-grid technology and furthers inclusive sustainable development, in theory (McDonald, 2009 in Newell and Philips, 2016:46). It is evident from the inequalities in the distribution previously described that electric capitalism is well and truly at play in Africa. Industries such as agriculture are often the first to receive funding for cheap connections, leaving the average citizen off the grid. This can be connected to the larger critique of neoliberalism. The humanity and rights of vital amenities such as electricity are relegated to the realm of service,

thus giving tacit permission for the continued exploitation of the weak and exacerbating economic and social inequalities.

Theories addressing access to electricity as a catalyst for theory for human development has taken on a more holistic scope since White's (2002) publication in 2002. The quality of health services, education, gender equality, household environment and daily activities have been attributed to electricity access. Lighting, heating, cooking, transportation, business, agricultural, infrastructure and telecommunications also fall under this umbrella (UN, 2019).

The prevalence of this issue within the development field can be exemplified through the SDGs. Goal seven is titled 'Affordable and Clean Energy. This goal centres around 'ensuring universal energy access, doubling progress on energy efficiency and substantially increasing the share of renewable energy by 2030.' (UN, 2019). SDG 7 includes five distinct targets for 2030 which all aim towards achieving the overall goal (See Appendix 2).

When discussing on and off-grid structures, one is referring to the formation of electrical grids. The on-grid format commonly describes a centralised station to which many homes and businesses are connected to provide electricity to end-users at a high capacity. Mainly, these are found in urbanised areas where its high capacity can be fully utilised. Alternatively, off-grid structures are small scale stations which provide a limited number of end-users in homes or businesses with power. Their limited capacity limits the amount of connections available, characterised further by its dominantly rural use. A hybrid model is simply the employment of both structures in their respective settings which can be owned independently or by the government. Kenya and Rwanda both employ a hybrid model as seen in their energy policies. It is important to note that this does not imply an even hand in terms of implementation or use. This will be further discussed in the analysis found in Section 5.

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The WB (2017) also reports that when reviewing all of the SDG targets, energy in a general sense is interconnected to 125 out of the total 169 targets. This represents 74% of the targets which speaks to the importance of the issue and why access to electricity should be prioritised in development agendas.

## 2.2 Contextualising Electric Poverty

### 2.2.1 Rwanda

From the infancy of its electrification programme, the Government of Rwanda (GoR) has always been firmly focused on a privatised model. However, in recent years, the energy sector has been guided by the Government's 2020 Vision and the Economic Development and Poverty Reduction Strategy II (EDRPS II). This not only has allowed mainstreaming of current and future energy development plans, but enhanced cooperation between the emerging government grid and decentralised off-grid companies. Additionally, Rwanda has also favoured the privatised model of energy procurement. Access however remains particularly low in rural areas which brings to mind Newell and Philip's (2016:46) and McDonalds (2009) electric capitalism, Although rural access is at 18% of the 29% of the population who has access, McDonald (in Newell and Philip, 2012:46) talks on how donors and entrepreneurs have been able to provide energy access for those left behind, while also make profit from the 'bottom of the pyramid'. In reality the evidence of private sector performance in Africa is described by Newell and Philip (2012:46) as mixed at best. The push for specifically private sector investment and not governmental has neoliberal origins, and that rural populations who do not use electricity for 'productive use' are adequately served by whatever the market is willing to provide.

The dynamics of the Rwanda energy scene are more varied and diverse than Kenya, but it maintains a strong state presence. Due the size of national grid, which is large compared to off-grid structures the Rwandan Energy Group (REG) is the largest player which acts as the coordinating body of the mainstream energy projects in Rwanda. Moreover, agencies such as the WB, Africa Energy, USAID, Africa Development Bank all work in collaboration to fund said projects. The Private Sector Federation is dedicated to promoting and represent the interests of the Rwandan business community who contribute to both urban and rural electrification schemes. Thus, other small-scale international donors and companies are not brought together within any centralised body but liaise with the government for implementation. It is important to recognise that the previously mentioned agencies also participate in small-scale rural funding.

With a population of 12 million, 1.7 million remain without access to the energy. Energy and rural electrification stand at 37.2% while urban connection is at 80% (IEA, 2019). The majority of the population dwells rurally, and the limited infrastructure has remained a barrier to expansion. To combat this, the Rural Electrification Plan has been implemented as the main driving force for rural electrification (MININFRA, 2015). This reinforces the IEA (2019) reports on electricity access and its uneven nature.

According to the Ministry of Infrastructure in Rwanda, the endeavour to reach 100% access to electricity is motivated by the recognition of the role in which electricity access has on accelerating economic development. This is in line with previous analysis made by White (2002). Rwanda has steadily seen a 15.1 % percentage point increase in access since 2000 (World Bank 2016; UNDP 2016; USAID 2018).

The GoR in collaboration with the agencies like USAID (2018) advise on the design and implementation of rural electrification strategies. Mainly, this consists of mini-grid solar home systems tracked through a verification database mechanism. The mobilisation of off-grid investments contributes to the acceleration of access utilising a bottom-up approach.

### 2.2.2 Kenya

The challenges facing Kenya's energy sector are well documented. Low electrification rate, reliance on imported fossil fuels, transmission inefficiencies, frequent power outages, high cost of rural electrification, demand for electricity outstripping generation capacity, and inability of the power utility agency to connect all customers who apply for connection are the main concerns. The Kenyan population left off the grid are done so because of their distance from the national grid and lack the economic funds to gain access to the grid.

Kenya Power (KP) is currently the sole distributing company of electricity in Kenya. Operating both Kenya's interconnected (on) grid, in addition to several rural off-grid stations in the northern regions of the country. However, the mid 1990's saw a small but successful IPP programme introduced (Kevin, 2013). As the single off-taker in the country, KP negotiates Power Purchase Agreements with generation providers and dispatched energy to 3.6 million customers as of August 2015 (Power Africa, 2016). Thus, the procurement of energy from IPPs, although successful remains at 20% while the remaining 80% is state owned and produced (Kevin 2013).

In 2010 Kenya adopted a new Constitution which saw a push towards more IPPs in grid procurement and rural off-grid site setups. Under the fourth Schedule of the new Constitution, the Ministry of Energy, on behalf of the National Government, is responsible for energy policy and regulation of electricity and gas reticulation (Ministry of Energy Kenya, 2018). This implies a high level of government involvement, but in more recent years Kenya's market has been shifting. This shift has been characterised and guided by the logic of 'green neoliberalism'. Specifically, through the active intervention and risk taking by IPPs and the government in the energy sector (Newell and Phillips, 2016:46). Meanwhile, access in Kenya alone has increased to 73% over the past 19 years

(IEA, 2019). Njugunah (2018) notes that electricity access rates in Kenya are the highest in East Africa at 56% compared to Rwanda's 29.37% at the time.

### 2.2.3 Shared Characteristics

Rwanda and Kenya both produce off-grid electrification via an ex ante (results based) manner (IEG, 2016:8). Reaching middle income country status is a goal set by Rwanda and Kenya, in 2020 and 2030 respectively. Considering both cases as low-income countries, launching comprehensive, nationwide programs in 2008/2009, to obtain universal access by 2030 is an ambitious. Both national electrification programs are grounded in a rollout strategy with a roadmap for achieving universal access. The Independent Evaluation Group (IEG, 2016:21) has identified that the Implementation of said programmes have progressed in a systematically efficient and coordinated grid and off-grid rollout. Both countries are well ahead of the original target plans in terms of monitored results on the ground. While maintaining a 'home-grown' approach to institutional frameworks, each program shares and exemplifies the four central dimensions of transformational programs for achieving universal access detailed in the IEG 2015 electricity access report. These dimensions are; developmental relevance, depth of change from the program as result, scale of change (large scale impact and widespread), and sustainability (IEG, 2016:22). The overhaul of previously sporadic electrification programs is the successful outcome of present programs and policies.

An additional dimension is the geospatial relationship of these countries. Their shared environmental experiences influence the choice of sources utilised to procure energy. Thus, sources such as; solar, wind and hydro are more lucrative and appealing to these countries. Raworth (2012:5) emphasises that environmental stress can exacerbate poverty, and vice versa. Both, Kenya and Rwanda procure energy from the hydro, wind and solar sources in the both on- and off-grid capacities. This further connects them in geospatial and environmental terms.

Rwanda has acknowledged that low-consumption households can be served more efficiently and cost-effectively by off-grid systems. Kenya does not explicitly share this view of the off-grid rural systems seeing them as secondary to that of the national grid.

### 3 Theoretical Framework

This thesis employs Carol Bacchi's (2009) methodological-analytical framework entitled the 'What's the problem represented to be?' (WPR) approach. The identification of 'problematizations' or 'problem representations' is the focus of said approach (Bacchi, 2009:30). In this context, the term 'problematization' refers to the difficulties of overcoming energy poverty. The notion that 'problems' exist independently of how they are identified, framed and resolved through policy is precisely what problematization attempts to challenge.

Moreover, Bacchi's (2009) six questions remove assumptions and contest the innocence of problems. It can uncover the tensions between those effected and those who create/ use discourse. Problems are produced in particular ways and how they are produced has important political implications. Thus, Bacchi (2009) shifts the focus from the problem to the problematization of issues such as electric poverty. From a political and developmental point of view, it is key to look beyond policy and at how powerful groups, such as governments, can disadvantage particular population groups through discourse and policy.

When one begins to question what 'electric poverty' is represented to be, one can begin to question what thinking lies behind such knowledge production. Consequently, what particular 'forms of rule' pertaining to the energy poor are produced within civil society and power dynamics. Forms of power derived from control over production, finance and technology otherwise known and power relations, should take a central position in the development of the energy industry of the Global South. Newell and Philips (2016:39) stress how the value of production and procurement can dictate who captures the value and who bears the cost. This can exaggerate or main existing inequalities on state, industry and rural levels alike (Newell and Phillips, 2016:46). Thus, by the Kenyan and Rwandan states first creating the discourse, they also position themselves as the most prominent players in energy transition. This links not only to International Political Economy but, poststructuralism and governmentality.

Michel Foucault (Bacchi, 2009:26) describes government as conduct - specifically, as the 'art of government'. This reinforces the theoretical foundations of governmentality and connects to the concept of 'problem representation'. The intention of employing a governmentality lens to analyse of policy documents is validated in its underpinning concepts. The post-structuralist underpinnings to which Foucault describes are the way in which discourses 'systematically form the objects of which they speak' (Halperin and Heath, 2012:312). This suggests a variety of paths for inquiry, but the most useful one is the exploration of how

reiterated key words and statements that recur enable and delimit fields of knowledge, enquiry and govern what can be said (Halperin and Heath, 2012:312).

Underlying this framework is the assumption that policymaking itself is a problematising activity. Hence, all policy documents contribute to problematisation. By following this logic, it can be said that people are effectively governed through problematisations rather than through policy (Bacchi, 2009: 31). This reinforces the poststructuralist perspective that facts, or in this case policies, do not speak for themselves, but are mediated by social products such as specific culture, paradigms and experiences which shape processes of description and interpretation (Broome, 2014:28). However, the core of this study takes this notion back to its very origins and attempts to investigate whether the problematisation itself is representative of the real-life struggles of the energy poor. How this particular problematisation of rural electric poverty has influenced policy. How has this particular resource influenced distribution? The varying degrees of emphasis placed on rural electric poverty, created by the problematisation of the issue, by the selected documents has dictated the policy and structural outcomes. Specifically, this is where one can differentiate between Kenya's nationalist grid focus and Rwanda's short term off-grid expansion and eventual assimilation.

Additionally, McHoul and Grace's (1993) discussion of truth production in discourse makes a valuable contribution to understanding how at the core, Bacchi's methodology uncovers the production of 'problems'. Discourse is defined as the:

*socially produced forms of knowledge that set limits upon what it is possible to think, write or speak about a 'given social object or practice'*

(McHoul and Grace, 1993 in Bacchi, 2009: 35).

This puts forward the notion that discourse is more than just language or language usage, but that knowledge only exists by commonly accepting what has previously been said. Thus, the ability to frame an issue within the wider discourse becomes a powerful governing knowledge and tool (Bacchi, 2009:35).

The theory referenced above relates to this study as the state has the ability to frame or problematise energy accessibility, thus shaping the magnitude and form of efforts and resources focused on it. Therefore, the consideration of language in the analysis process is necessary to ensure a holistic picture is being portrayed within the selected policies. A clear link can be drawn between McHoul and Grace's (1993) discourse language and Bacchi's methodology. In an attempt to mitigate falsehoods within the policies, the presence of supporting documents and materials is used verify statements utilised within the policies.

# 4 Methods

## 4.1 Research Design

The study of energy accessibility and ‘problem representation’ pertaining to Rwanda and Kenya will be conducted as a comparative case study. The WPR approach presented by Bacchi (2009) will be used to complete a Foucauldian ‘text’ analysis on selected energy policies from both the Rwandan and Kenyan Governments. This is done to examine how two government policies address the issue of energy poverty, specifically the expansion of access to electricity in different ways. In other words, how the problem of electrical access is represented by two different states and how strategies to address said issue diverge. Design-wise, this analysis takes the form of a comparative case study. As identified by Miles and Huberman in Punch (2014:143), the term case can be defined as a phenomenon of some sort occurring in a bounded context. Although vague, this boundary setting lends itself to many interpretations including but not limited to; an individual, an organisation, a community, a decision or policy. Thus, a variety of situations are encompassed within this definition which allows analysis in a case study format. Halperin and Heath (2012:205) add that the advantage of the case study is the intense examination of a single case. Bryman (2012:70) is quick to point out that case studies do not explicitly attempt to produce external validity or generalisability, but a complex study of a single context. However, a comparative case study uses identical methods to embody the logic of comparison. By contrasting cases, one can better understand phenomena in relation to two or more cases. Additionally, one can further address a wider theoretical and/ or intellectual relevance of the phenomenon which could suggest concepts applicable to cases beyond that of the original (Halperin and Heath, 2012: 205). This thesis aspires to analyse and describe the selected cases in an in-depth manner which highlight the complexities of the respective governments and their policies (Punch, 2014:120)

## 4.2 Case Selection

It is widely acknowledged that Africa is currently one the least electrified continents, yet its economies, like many others are dependent on energy access. The cases of Rwanda and Kenya were firstly selected on the basis of their

geographic proximity. Obviously, this narrows the scope to the EAC region, which also includes Tanzania, Uganda, Burundi and South Sudan. This further enhances comparison as they encounter similar weather patterns, thus experiencing similar environmental hardships. This is a consideration to make as both governments already use, and intent to expand renewable energy sources. These sources, as previously, mentioned include wind, hydro and solar power, which are dependent on weather patterns. Additionally, the two countries similar political development would predict similar outcomes in terms of policy. However, this is not, in fact, observable, a fact which enhances and justifies the selection of these cases.

The differences between the cases were also attractive for the comparative nature of this study. Fundamentally, the electrification programs and policies of Rwanda and Kenya differ. This deviation is the catalyst for the study. Moreover, both cases are often discussed in conjunction with each other as examples of ‘good practice’ as stated by the IEG, while also exemplifying the differences in structure and institutional formation. Hence, the selection of Rwanda and Kenya as the cases for comparison of energy policy is rooted in both their similarities and differences.

### 4.3 Empirical Material

The materials identified as most relevant to this study and based on purposive sampling of secondary data include official policy documents published by the Rwandan and Kenyan Government (Bryman, 2012:428). Specifically, the Kenyan Ministry of Energy and Petroleum: National Energy Policy (2014), and The Rwandan Ministry of Infrastructure: Rwanda Energy Policy (2015). Vitaly, these sources indicate the goals and strategies of each respective government on the topic of energy. Specific emphasis will be placed on sections pertaining to increasing rural accessibility to electricity and grid formation. Additionally, sections discussing private actors and their role in rural electrification proved useful in the analysis. Based on the research questions, these sources will prove the most helpful in answering these questions. The use of Bacchi’s (2009) first four question in the WPR approach will prove most useful in the context of the selected materials. The semi-recent publication of the policies does not allow questions five and six to be easily answered. Furthermore, question five asks the analyst to consider the effects and implications of the policy, while question six looks to where the representation was produced. Both of these questions fall outside the scope of this research and thus are not answered in the analysis.

## 4.4 Supporting Material

Supporting documents and additional documents are used to validate information and statements made throughout the policies without statistical or text-based evidence but reinforce the strategies and sentiments of the policies. This can be found at play within the analysis section, but more prominently in the discussion Section 5.3.

These sources range from agencies like The WB, US AID, African Development Bank, SE4ALL and IEA.

These sources have insight into the topic under analysis as most of these agencies are involved with the said policies, so that their documents are able to validate or invalidate claims made in the policies while also contextualising the policies from another perspective.

Furthermore, the media sources are used to broaden the contextualisation of the policies in a meaningful way. The official and dominantly technical language used throughout the policies decontextualize and distance themselves from the reality of electric poverty. Importantly, the absence of a direct characterisation of electric poverty in the respective policies limits analysis possible using the Bacchi's (2009) method. Hence, the additional of sources in which address this head-on allow for the analysis to continue.

## 4.5 Rural Electrification Policies from a WPR Approach

The WPR approach will be utilised to analyse policy documents from the Rwandan and Kenyan Governments. The six-question investigation guide by Bacchi (2009) will facilitate the conduct of the analysis. However, only the first four questions will be utilised as per the delimitations previously stated. Although not explicitly answered in the analysis, questions five and six will not be completely ignored, they serve a peripheral role to catalyse further points of discussion throughout the analysis process.

Bacchi's WPR approach consists of the following questions:

1. What's the problem represented to be in a specific policy (or policy document)?
2. What presuppositions or assumptions underlie this representation for the 'problem'?
3. How has this representation of the 'problem' come about?
4. What is left as unproblematic in this problem representation? Where are the silences? Can the 'problem' be thought about differently?

5. What are the effects produced by this representation of the problem?
6. How/ where is this representation of the 'problem' produced, disseminated and defended? how could it be questioned, disrupted and replaced?

(Bacchi, 2009:48)

## 4.6 Limitations and Assumptions

For transparency, one must acknowledge the limitations of secondary data. The familiarisation period with the data collected was short which did not allow for an extensive or completely immersive experience with the data (Bryman, 2012:315 - 316). Thus, the lack of control over the quality of the data can be considered a limitation. The major underlying assumption remains that the information collected and presented by the chosen data is accurate and representative. In an attempt to mitigate this, several independent sources were used to corroborate information, text-based and statistical.

# 5 Analysis

The following analysis will use the WPR approach for each of the selected cases. This will be done individually but contrasted with each other in terms of divergences and convergences in the discussion.

## 5.1 Rwanda

1. What's the problem represented to be in a specific policy (or policy document)?

The opening lines of the policy acknowledge the critical and productive role in which energy access plays in Rwanda. Not only the economic, environmental and stabilising effects, but the promotion of 'social equity' and its facilitation of socio-economic transformation. The importance of 'maintaining human security' is mentioned in direct connection to energy services including; cooking, lighting, heating, brewing, firing, boiling, ironing, and operating electric appliances (MININFRA, 2015:6). This framing echoes the conceptualisation of energy access as a HR. Yet again, this link is not made directly due to the vague language used, but is eerily similar to that of the UN charter and the Universal Declaration of HR. Particularly, this is noted in Chapter two, Section 2.3 'Overarching Policy Goals' as:

*The overall goal of the policy is to ensure that all residents and industries can access energy products and services that are sufficient, reliable, affordable and sustainable.*

(MININFRA, 2015:14).

A link in this language shows that the Rwandan state can be said to acknowledge the importance of energy access in terms of HR.

Furthermore, the repetition of words such as *modern, sustainable, reliable and affordable* throughout the entire policy is an indication of the characteristics lacking in the current Rwandan energy scene. This is exemplified in Section 2.2 as it is elaborated further that the Rwanda energy sector is attempting 'to create conditions for the provision of sufficient, safe, reliable, efficient, cost-effective and environmentally appropriate energy services to households and to all economic sectors on a sustainable basis' (MININFRA, 2015:14). Such a broad representation portrays electricity poverty as a far-reaching and complex problem.

In specific relation to rural electrification, one must look between the lines to find the problematisation. Throughout the policy, rural electrification does not have a

dedicated section, however, Public Private Partnerships (PPPs) and IPPs are discussed and can be considered stand-in terms. Enhanced participation is promoted, but in the context of decentralised short-term goals. Thus, one can see the connection between the private sector and rural electrification. Interestingly, the private sector becomes almost synonymous with off-grid energy services. Nowhere is this made more clear than in section 2.5.3 (Accelerate and facilitate energy sector PPPs) of the policy as it states

*Areas particularly suitable for PPP structures include: rural energy service provision such as off-grid and mini-grid systems*

(MININFRA, 2015:17).

Additionally, an increase in private sector participation of energy procurement speaks to the interest of the GoR in maintaining a friendly relationship with the private sector to one day connect these rural off-grids to the centralised national (on) grid.

Hence, the access to energy is clearly represented to be the central issue the policy attempts to address, but rural electrification remains in the background as an issue to be addressed further by the private sector.

2. What presuppositions or assumptions underlie this representation for the ‘problem’?  
This problematisation of the rural or off-grid sector of Rwandan energy relies on the assumption that private sector actors will persist in their attempts to electrify the rural areas. Without their participation, communities will go without access and remain unseen and unconnected for an undetermined period of time if non-profit organisations, private investors or companies retract their projects. Thus, the rural communities must rely on the philanthropic nature of said investors to promote energy access. This assumption is dangerous as non-profits must carefully distribute their limited resources, while the private investors are not known for their humanitarian spirit. Thus, the ideal that energy as a HR will resonate enough with private investors to maintain investment is naïve.

Additionally, the presumptions that the information used to form this policy is accurate and that rural communities will join the mini off-grids are to be considered. There is no consistency in connections/ joining fees, let alone ongoing fees. Thus, rural communities’ willingness to cover the cost of these mini grids is also considered an underlying assumption of rural electrification documents.

3. How has this representation of the ‘problem’ come about?  
The prevailing electric poverty in Rwanda is seen as the driving force behind the representation of this issue. With only 18% of the rural community having access to electricity, it is clear to recognise why such a policy was needed (World Bank, 2016). Within the policy itself, it is explained as a response to rural access to energy to guide and influence decisions on the development of Rwanda’s energy resources. It is implied that it was born out of necessity to create a structured

approach to national energy access. A disconnected effort would not have the follow-on effects explained in White's (2002) work or the ones listed by the policy itself. Although rural electrification is predominately portrayed as an issue to be covered by the private sector, Rwanda acknowledges the short-term nature of this solution.

Heavy end-users who are described as urban centres and industry as they require far more energy to operate, are prioritised for (on) grid connection as they require a large concentrated amount of electric capacity. For lighter users, such as single homes which require far less capacity, at this point in time during EDRPS II, (on) grid connection does not make economic sense (MININFRA, 2015:12). Thus, off-grid connection in the short term is preferred. Hence, the prioritisation of industry over the rural communities fosters an uneven approach to energy access across the country when considering the HR conceptualisation.

4. What is left as unproblematic in this problem representation? Where are the silences? Can the 'problem' be thought about differently?

The Rwandan energy policy has many silences and leaves a few issues untouched. Firstly, it relies on the idea that the eventual state driven amalgamation of the on and off-grids will occur without a hiccup. The interest of investors in the private sector is not discussed or mentioned. From a business perspective, a short-term investment in a project which will be consumed by the state does not sound appealing. The policy is limited in its explanation of this future amalgamation. A public-private partnership has the potential to satisfy the basic neoliberal foundations of private sector, however a national grid would not. Either way, the private sector is still left at a disadvantage in terms of their capacity to build revenue. A further example of how language in the policy has potentially negative outcomes for not only its rural citizens, but private actors. The insights of McDonald's (2009) are being ignored here. The framing of the policy fails to address the willingness (or unwillingness) of companies and organisations to continue their humanitarian work.

Considering Rwanda is categorised as a low-income country, the consideration of joining fees and payment schemes are notably absent in reference to rural end-users. The issue of tariffs is addressed, yet the very real monetary stress of joining or accessing energy grids (on or off) by the rural population is seemingly unproblematised. This is pivotal when considering Toman's (2017) productivity paradox as it can take decades for the population to utilise available technology in a meaningful and productive way on a household level as previously discussed.

Lastly, the underlying assumption that this model will bring about an increase in electricity access without clear investment in infrastructure. Rwanda is only 26,338 km squared and a population of 11 million, but majority dwell rurally, thus large investments in infrastructure are required to eventually bring an amalgamated national grid closer to completion.

## 5.2 Kenya

### 1. What's the problem represented to be in a specific policy (or policy document)?

The overall national development objectives of as stated in the 2014 National Policy are accelerated economic growth; increasing productivity of all sectors; equitable distribution of national income; poverty alleviation through improved access to basic needs; enhanced agricultural production; industrialisation; accelerated employment creation and improved rural-urban balance. The most relevant objectives in terms of this thesis would be those of poverty alleviation through improved access to basic needs and improved rural-urban divide. Similar to Rwandan case, a link can be made with the HR conceptualisation of energy access and the GoKs policy on energy. The symbiosis of energy access and socio-economic development are also mentioned throughout the policy reaffirming White's (2002) sentiments.

The policy lists many challenges but import to this thesis is high cost of energy, low per capita income, low levels of industrialisation, competitiveness, quantity, quality and reliability of energy supply (Ministry of Energy and Petroleum Kenya, 2014:2). Although the aforementioned challenges are national, these issues can be considered especially pronounced in rural areas. Section 1.2 (Energy and Petroleum Policy Objectives) further elaborates on the overall objective of the energy and petroleum policy. These include; sustainable, adequate, affordable, competitive, secure and reliable supply of energy to meet national and county needs at least cost, while protecting and conserving the environment (Ministry of Energy and Petroleum Kenya, 2014:18). Specifically, the GoK recognises the issues of rural electrification in Section 4.5.7.2:

- (a) *High cost of connection*
- (b) *Scattered population settlements in the rural areas leading to long distribution lines. The noncontrolled sub-division of arable land has escalated this problem.*
- (c) *Harsh terrains and inaccessibility due to underdeveloped infrastructure leads to high cost of REP Projects.*
- (d) *High operating costs of grids in rural areas due to low population density.*
- (e) *Acquisition of ways due to high compensation demand by public institutions and landowners.*
- (f) *Vandalism of power infrastructure.*

(Ministry of Energy and Petroleum Kenya, 2014:86-87)

Phrases such as 'affordable, competitive, sustainable and reliable supply of energy to meet national and county development needs at least cost, while protecting and conserving the environment' (Ministry of Energy and Petroleum, 2014:18) are

repeated throughout the policy. Hence, these matters could be characterised as central to Kenya's energy problem.

From the perspective of rural access, it is unfortunate that the Rural Electrification Authority has been transformed into the National Electrification and Renewable Energy Authority. Previously in charge of streamlining the implementation of the rural electrification programme. It is to be the lead agency for development of renewable energy resources other than geothermal and large hydros. The reasoning behind this move is based in the increase of productivity of all sectors mentioned in the overall development objectives. This can be interpreted as a dilution of focus on rural development as a separate and import matter.

2. What presupposition or assumptions underlie this representation for the 'problem'?

One can argue that this policy presumes that all of the statistics are correct, and that the information gathered is an accurate depiction of electricity access in Kenya. Naturally, this is a simple assumption to question. Additionally, the assumption that end-users will utilise and connect to a provided grid. Links can be made back to Toman's (2017) Productivity paradox, akin to Rwanda.

It is also assumed that the high cost of rural electrification is a legitimate reason to continue an uneven distribution of electricity. Yet again, the division of rural and urban communities is present, highlighting the governments prioritisation of economic development. It can be said that the government sees this as a genuine reason to avoid large upfront capital outputs. This understanding can be allied McDonald's (2009) electric capitalism, as the rural areas are deemed too expensive and are left off the national grid.

As mentioned in item (b) of the recognised issues of rural electrification as stated by the GoK is 'The noncontrolled sub-division of arable land'. This implies a lack of local governance and an underlying tension that there *should* be control. This implies that a certain level of inadequate governance is accepted by the policy and is left unaddressed.

3. How has this representation of the 'problem' come about?

This policy was created out of necessity to review the energy sector framework in order to align it with the new 2010 Constitutional dispensation and the 2030 Vision. The expansion of the centrally controlled national grid needed a uniform reference document in which to refer to in terms of energy. This national planned expansion cannot occur without a centralised process as previous iterations of the energy policy have produced lacklustre results.

Additionally, the connected grid with Uganda and Tanzania underlines the governments priorities for economic growth over HR fulfilment. This will be further explained in question 4, however the overlooking the rural sector because it is not a traditionally 'productive' user of energy has created a tense urban-rural

divide technologically and forced the transformation of the constitution and energy policies.

4. What is left as unproblematic in this problem representation? Where are the silences? Can the 'problem' be thought about differently?

The overly technical manner which the policy is written limits its capacity to convey the struggles of individuals to live with inadequate energy sources. There is an absence in explaining the pressures rural community members would face when connecting to a grid. Namely, the fiscal and infrastructural dimensions of grid connection are not mentioned in the policy. This can be interpreted as a lack of understanding on the individual/ family level of development on the GoK part.

Item (b) of the recognised issue pertaining to rural electrification, as previously stated is the implied control over arable land division. Furthermore, the location of the extensive links required to the grid are absent, pushing the issue of land ownership and division deeper. Additionally, vandalism is item (f) on the list and is also underexplained. This reinforces the previous sentiments of lacklustre local governance. Who is doing it? and why is not further explained by the policy. One could infer that the vandalism is a symptom of the rural population's unhappiness with the installation of these mini grids. Perhaps, from their perspective there are more pressing issues that are being ignored by the government. These are major silences presented by the GoK.

Moreover, the consequences of having an interconnected grid with Uganda and Tanzania are untouched. This is vital because it is unclear how the previous prioritisation of industry hubs and urban centres of not only Kenya, but also other neighbouring countries too will affect rural communities. The beneficiaries of this policy in terms of production control are spoken of in limited fashion which is a cause for concern when considering the nationalist standpoint of procurement and distribution of energy in Kenya. Newell's and Philips (2016:47) mention the role of power dynamics and the ability for the elite to capture the value of energy booms. This has the potential to maintain or exacerbate existing inequalities in terms of rural-urban dynamics.

### 5.3 Discussion

The following discussion attempts to relate and compare the analysis of Rwanda and Kenyan policy documents to one another. The supporting materials are also utilised to further contextualise the analysis in relation to the wider picture.

The policies regarding energy and rural electrification by the Kenyan and Rwandan Governments through Bacchi's (2009) questions have highlighted both similarities and differences. An example of these similarities is the repetition of

phrases such as ‘affordable’ and ‘reliable’. This is reminiscent of Halperin and Heath’s (2012:312) post-structuralist interpretation and how the state has enacted its power to ‘create’ the discourse or problematise energy poverty and rural electrification. Moreover, such words can be seen repeated outside of these policies by other government agencies such as KP, REG and media articles (Mudingu, 2019), independent reports by the WB (2016), SE4ALL (2016), Power Africa (2016) and the IEA (2017). The penetrative importance of ensuring energy access is both affordable and reliable, as represented by the policy, is echoed by stakeholders, the media and end-users alike, giving further force to Halperin and Heath’s (2012:312) post-structuralist interpretations.

Additionally, the framing of this problem as a HR issue is present in both policies. However, the documents convey the impression that, on a national level, Rwanda is more committed to this framing as it prevails throughout the media and is easily seen throughout the policy. Kenya on the other hand are not so focused on the HR aspect, rather the economic growth which comes with access. This further contextualises Kenya’s neglect of rural electrification and focus on industries, urban centres and its connective grid structure.

Kenya differs from Rwanda in the purpose of its creation. With the new Constitution coming into effect in 2010, the policy was a result of the state’s need to assert more centralised control over national issues. Rwanda on the other hand required a new structured approach to tackle electric poverty as previous uncoordinated schemes did not yield desired increase in electrification. Hence, the divergence can be seen in question three of Bacchi’s (2009) analysis. The Kenyan policy can be considered to be driven by a state-centred desire to impose a vision of an overarching ‘order’ in the wake of the 2010 Constitution. Whereas, Rwandan policy is more so driven by the HR imperative. However, question three does show that both cases prioritise heavy end-users over their rural communities.

The participation of the rural communities in the mini off-grids was called into question in both cases. Furthermore, the notion of Toman’s (2017) productivity paradox is applied to underscore how the assumption of joining these grids is naïve. As presented in questions two and four, the fiscal stresses placed on the rurally communities are undoubtedly overlooked by these policies. This may be due to the neo-liberalist approach both countries attempt to employ, however the complete absence of this issue is alarming in terms concern for its citizen and its HR conceptualisation.

Where Rwanda recognises the need to eventually integrate the private market based rural systems with the centrally controlled urban grid, Kenya leaves the neo-liberalist market to fill the rural energy gap completely independently. Both these strategies have their advantages and disadvantages, The Kenyan documents fail to elaborate on how these two systems would one day integrate. Similarly, Rwanda assumes a smooth amalgamation without the acknowledgement of how this would affect the interests of the private section.

Unfortunately, Rwanda lacks a dedicated section on rural electrification; thus meaning must be drawn from the discussion of the private sector. Kenya on the other hand does directly address the situation of rural inhabitants and infrastructure.

Both cases miss the mark on acknowledging the need for large capital outlays for infrastructure. Without such an investment, one cannot reasonably argue that access to energy on a national scale will increase. This links with the core reason for increasing access, increased living standards and economic growth. Neither will materialise if mass investments are not made in infrastructure rurally and urban despite plans for amalgamation or not.

## 6 Conclusion

Ultimately, the policies pertaining to rural electric poverty in the cases of Rwanda and Kenya are complex and dynamic in nature. Analysis using Bacchi's (2009) WPR approach has yielded examples of both convergences and divergences in policy. To answer the research question How is the problem of electric poverty in a rural context been represented in the Kenyan and the Rwandan energy policies, respectively? One could say that the problem of electric poverty in a rural context has been presented in a dynamic and multifaceted manner through an economic, developmental and HR lens. This is a clear convergence in the policies, although Rwanda has a more evident focus on the HR and development aspects. Divergences can be seen in the emphases, within the policy statements, on the needs and transformative capabilities of different actors, for example, industry vs rural dwellers or state sector vs private; as well as in the placement of the energy sector along the state-driven vs neoliberal political spectrum. Moreover, long-term vision of the off-grid or rural energy sector differs between cases. Thus, can conclude that in the cases of Rwanda and Kenya the problem of electric poverty in rural districts has been represented in similar ways in policy. However, there are several key divergences made in language, structure, long-term vision and underlying assumptions.

Potential paths for further research could include the perspective of the companies and agencies working in rural areas to provide energy access. Utilising the WPR analysis to expand understanding of the dynamics of the long-term relationship between the on and off-grid systems to fulfil the 100% access in these two cases. Alternatively, a look into the small-scale movement such as solar and wind resources for rural electrification and a more private sector driven growth would prove an interesting counter to this thesis.

In essence, the challenges for both of these countries are broadly similar and their energy futures shall be interesting to follow, but at the core are the concepts of energy as HR and development outcomes. Ensuring the fulfilment of these concepts trumps all, hopefully the present policies bring about these changes and innovations.

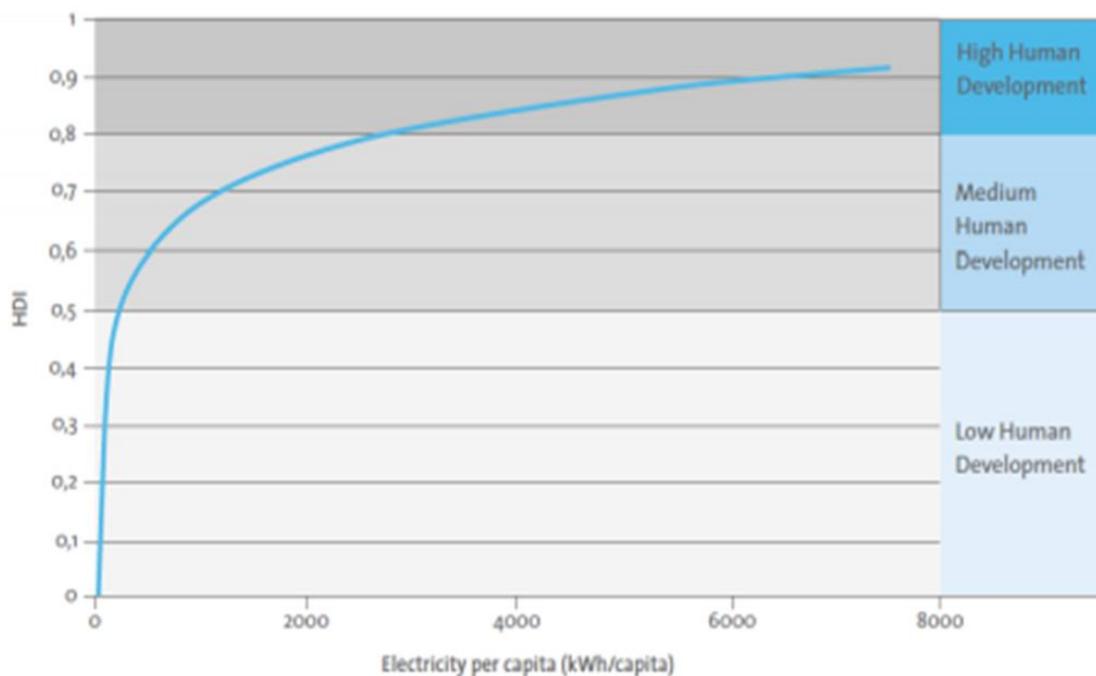
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## 8 Appendices

Appendix 1: Macro-level correlations of access to electricity and human development (White, 2002).



Appendix 2: 2030 Targets for SGD 7 (UN, 2019)

*7.1 Ensure universal access to affordable, reliable and modern energy services.*

*7.2 Increase substantially the share of renewable energy in the global energy mix.*

*7.3 Double the global rate of improvement in energy efficiency.*

*7.4 Enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology.*

*7.5 Expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, Small Island Developing States, and land-locked developing countries, in accordance with their respective programs of support.*