

**Connections Matter: Implicit infrastructures and Electricity Access in  
Witsand, Cape Town**

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## ***Plagiarism Declaration***

I declare this thesis to be entirely a culmination of my own work. It has never been submitted in part or in full for any award or qualification. Where I drew on the work and ideas of others I have fully cited and referenced accordingly.

Signed by candidate

Romeo Dipura

6 January 2022

## ***Abstract***

For most residents living in Witsand, on Cape Town's north-western urban periphery, electricity access involves piecing together electricity wires and connecting them to Eskom transmission lines or tampering with Eskom prepaid meters and recharging with cheaper black market electricity vouchers. These practices require residents to circumvent Eskom's vouchers and prepaid meters in order to adapt Eskom electricity to their lived realities. In a context where Eskom electricity provision is sometimes absent, often unreliable, and largely unaffordable, residents engage diverse strategies to take charge of their own electricity inclusion. This research draws on over twenty months of fine-grained ethnographic work in Witsand, where I reside, which included journaling, transect walks, to map typologies of connections, participant observations, and semi-structured interviews.

Building on Storeys' (2021) notion of 'implicit' infrastructures, in this thesis I substantiate how resident-made electricity connections prove a critical, although implicit, part of the wider electricity infrastructure system. While these connections are essential for residents' access, they are also dangerous and unsanctioned by Eskom. Resident-made electricity connections involve enduring bodily, material, legal and relational risks. These risks range from resident electrocutions and house-fires to Eskom penalties and disconnections. Drawing on a sociotechnical approach to infrastructure, I use the notion of 'precarious power' to explore the mix of agency and precariousness that are entangled in the everyday practices of ordinary people making electricity connections. I argue that in improvising electricity access, residents in Witsand exercised their agency to circumvent, adapt and appropriate Eskom electricity. Yet in doing this they simultaneously endured the precariousness of the daily labors, bodily risks and contestations associated with their practices. In making this argument, I contribute to an understanding of urban residents' everyday infrastructural experiences through an analytical frame that is neither dismissive of their agency nor celebratory of their struggles.

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## ***Acronyms***

ACC	African Centre for Cities
CBD	Central Business District
CoCT	City of Cape Town
GIS	Geographic Information Systems
IEEECO	Integrated Energy Environment Empowerment Cost Optimization
NGO's	Non-Governmental Organizations
OCGT	Open Cycle Gas Turbine
PHP	People's Housing Process
RDP	Reconstruction and Development Programme
UN	United Nations
WEHBSO	Witsand IEEECO Housing Beneficiary Support Organization
WHC	Witsand Housing Committee
WHSP	Witsands Human Settlement Project

# Connections Matter: Implicit infrastructures and Electricity Access in Witsand, Cape Town

## Introduction

Living at the margins of both the City of Cape Town (CoCT) and of a modern infrastructural ideal, electricity access for most residents in Witsand is an everyday struggle.

While some residents remain unconnected to the Eskom grid, others endure frequent electricity tripping and some fail to afford recharging with Eskom vouchers. However, Witsand residents were not passive victims in their struggles for electricity. They took charge of their own electricity inclusion by making highly complex connections. Some pieced together wires, connected them to Eskom transmission lines and brought electricity to their homes, others bypassed Eskom prepaid meters and accessed electricity for free while some recharged with cheaper black-market vouchers. In doing this, residents were not mere consumers of electricity produced, transmitted, and regulated by Eskom. Instead, they improvised with whatever that was at hand and whoever they knew to make, use, and contest electricity infrastructure.

Yet resident-made electricity connections were 'precarious achievements' (Gupta, 2015; Baptista, 2018), they were materially unstable, bore bodily risks and were sustained through persistent labor. Live wires hung loosely from Eskom poles, crossed streets, or poked from underground connections posing severe bodily risks for residents and minors. Moreover, resident-made electricity connections were constantly falling apart, always in the making and sustained through persistent material and relational labor. Furthermore, these connections were contested within and between households, as well as with Eskom. Recharging on the same prepaid meter in multi-household living arrangements was a source of conflict between households as they tussled over whose turn it was to pay for the electricity when it exhausted. Moreover, RDP house dwellers often clashed with resident-made house dwellers blaming their self-made electricity connections for overloading the electricity infrastructure system and causing blackouts in their houses. In the parlance of Gupta (2015) resident improvised electricity was 'precarious power'.

In this thesis I explore the everyday practices of ordinary Witsand residents in making electricity connections and how agency and precariousness were mediated through these practices. There is a rich body of literature on urban infrastructure as a sociotechnical process (Star, 1999; Graham and Marvin, 2001; Hughes, 2012). In this body of work, infrastructure is framed as a complex sociotechnical system (Hughes, 2012) born out of, and shaped by, the context in which it operates and which it also helps to produce. Sociotechnical approaches to infrastructure provide the meta framing for this study. Thinking specifically about electricity infrastructure, the sociotechnical approach emphasizes the ways in which electricity infrastructures are relational and co-constituted through/with space, different actors, and various rationalities.

Key to this study is literature on everyday urbanism which focuses on the processes through which users produce, maintain, and contest 'formal' and 'informal' infrastructures (Jaglin, 2016; Baptista, 2018). Everyday urbanism literature provides new models for understanding infrastructure in the Southern City, primarily through the language of 'heterogeneous' and 'hybrid' infrastructures (Jaglin, 2016; Lawhon et al., 2018). While literature on resident-made electricity connections in the Global South has often framed these connections as 'illegal' and 'dangerous' (Kirsch, 2005; Gupta, 2015), I draw here on Storey's (2021:81) notion of 'implicit infrastructure', to substantiate how resident-made electricity connections prove a critical, although implicit, part of the wider electricity infrastructure system. In drawing on implicit infrastructure, I explore how resident-made electricity connections formed infrastructure configurations that were necessary parts of the workings of infrastructure systems, and yet not sanctioned pieces of the systems themselves.

This thesis is based on ethnographic research carried out in Witsand, a township tucked away on the northwestern periphery of the city of Cape Town. Witsand is characterized by a complex mix of resident-made houses (shacks made predominantly from zinc) and RDP houses (houses funded and built by the state). I first arrived in Witsand in February 2020, planning to live there for two years while I completed my Master's degree at the University of Cape Town (UCT). We rented an RDP house sandwiched between two zinc made structures from the back and the front of the plot together with three other families. Following a series of electricity blackouts in the RDP houses in our street, on the

25th of May 2020 all the males from my household were summoned by the Street Committee to participate in an encounter against informal house dwellers who were allegedly connecting electricity 'illegally', overloading the electricity network and causing electricity tripping in RDP houses.<sup>1</sup> It was from reflecting on the discomfort of participating in this protest that my interest in studying resident-made electricity connections emerged.

The fine-grained ethnographic work in Witsand included journaling, transect walks, to map typologies of connections, participant observation, and semi-structured interviews. Building on Storeys' (2021) notion of 'implicit' infrastructures, in this thesis I substantiate how resident-made electricity connections prove a critical, although implicit, part of the wider electricity infrastructure system. While these connections are essential for residents' access, they are also dangerous and unsanctioned by Eskom. Drawing on a sociotechnical approach to infrastructure, I explore the mix of agency and precariousness that are entangled in the everyday practices of ordinary people making electricity connections. I argue that residents' improvised electricity in Witsand can be framed as some form of 'precarious power' in that it was both a site for resident agency and of precariousness. In making this argument, I contribute to an understanding of urban residents' everyday infrastructural experiences through an analytical frame that is neither dismissive of their agency nor celebratory of their struggles.

### *Plan of the thesis*

This thesis is organized into six chapters. The first chapter introduces literature on the challenges of electricity access on the urban periphery, drawing particularly on sociotechnical approaches to urban infrastructure and work on resident-made electricity connections. I use the notion of 'implicit' infrastructure to set out the key analytical framework underpinning this study. Chapter two situates the ethnographic research design in the specific context of Witsand, a peripheral township situated on the outskirts of the City of Cape Town and characterized by a complex enmeshing between RDP and

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<sup>1</sup> Street Committees consist of individuals selected in each street to work as community watchdogs on the ground to alert police to crime.

resident-made houses. Apart from introducing the study site, chapter two also details the fine-grained ethnography and mixed methods I employed in the research.

In Chapter three I introduce the layered challenges of electricity access in Witsand, namely a lack of connection to the Eskom grid for some residents, the unaffordability of Eskom vouchers for others, and the provision of a weak electricity current by Eskom, often at odds with residents' lived realities and prone to tripping. In chapter four I demonstrate the ways in which residents access electricity nonetheless by tapping it directly from Eskom transmission lines, bypassing Eskom prepaid meters and recharging with cheaper black-market vouchers. I argue that through these connections residents circumvent, adapt, and appropriate to take charge of their electricity inclusion. Yet, these strategies carried risks, from electrocutions and house-fires, to conflicts between residents and Eskom disconnections. In substantiation of these risks, in chapter 5, I frame these forms of electricity access as precarious achievements, shaped by associated bodily, relational, and legal risks. Finally, in chapter six I explore the mix of agency and precariousness that are entangled in the everyday practices of ordinary people making electricity connections. I argue that resident improvised electricity in Witsand can be framed as some form of 'precarious power' in that it was both a site for resident agency and of precariousness.

# **Chapter 1: 'Implicit' Infrastructures: Resident-made Electricity Connections in the Global South**

## **Introduction**

Infrastructures in the Global South are neither entirely the work of service providers nor of urban dwellers, rather they are 'hybrids', co-produced by both residents and service providers (Jaglin, 2016). They often involve the bricolage of urban dwellers combining formal, and informal technologies; adapting and embracing whatever forms of infrastructure that enable survival (Lemanski, 2020). In this chapter, I build on Storey's (2021) notion of 'implicit' infrastructure to explore the ways in which residents' actions are integral for infrastructure access in the Global South and, yet, sometimes dangerous and unsanctioned by authorities. I draw on intersecting bodies of literature on the challenges of electricity access on the urban periphery, sociotechnical approaches to urban infrastructure, and resident-made electricity connections. This literature provides a useful language both to frame and situate my study in broader scholarly debates in Southern Urbanism.

### **1.1 The Challenges of Electricity Access on the Urban Periphery**

For most residents living on the urban periphery, electricity access is an everyday struggle (Baptista, 2018). The urban periphery has often been conceptualized in planning literature as a spatial construct, synonymous with the geographic 'edges', 'margins' or 'fringes' of city regions (Horn, 2018). In the context of apartheid spatial planning in South Africa, these spaces have historically accommodated marginalized Black and Colored communities. Eskom electricity connection rates in these areas have historically been low (Von Schnitzler, 2016). This is exacerbated by the fact that because of apartheid spatial planning, South African cities are highly segregated and of low-density, resulting in significant financial and infrastructural challenges for electricity distribution (Baker and Phillips, 2019).

Moreover, while the rate of urbanization is marked in the developing world, with cities anticipated to accommodate 80 percent of the world's urban population by 2030 (UN-Habitat, 2012). Part of this population growth has been accommodated on the urban periphery through 'informal' and 'formal' houses. The magnitude of these population increases makes it almost impossible for urban authorities to provide sufficient infrastructure and guarantee adequate urban services. Urban growth in Africa has not been accompanied by a corresponding growth in infrastructure, public amenities, and governance capabilities (UN-Habitat, 2015). Given the evidence that 'the poor are urbanizing faster than the population as a whole' (Ravallion et al., 2007:693), the ability of the poor to connect to urban infrastructure becomes uncertain. Ordinary people often live unconnected to the infrastructure network, chronically waiting for basic services (Oldfield and Greyling, 2015).

Moreover, the rapid urbanization in Southern cities is independent of industrial growth which has induced the growth of the informal economy (Pieterse, 2011). These 'informal' socio-economic conditions and the nature of the built environment challenge the operation of conventional electricity networks (Coutard and Rutherford, 2016). Gupta (2015) writing on electricity infrastructure in India shows how bureaucratic structures prevented the electrification of informal houses. Similarly, informal houses constitute one third of all the houses lacking electricity connection in South Africa (Massey, 2014). In South Africa, 3.2 million households, particularly those in informal settlements, lack access to electricity and other basic services (Von Schnitzler, 2016).

Although Baker and Phillips (2019) acknowledge that electricity grid connection rates have increased from only a third of the population to approximately 87% since the end of apartheid in 1994 in South Africa. Many low-income households cannot afford to use the grid to which they are connected. This is because the electricity is often provided on a cost recovery basis, guided by neoliberal principles when most residents are employed in the informal economy (Baker and Phillips, 2019). As such residents ended up doctoring the prepaid meters to access the electricity for free (Kirsch, 2005). Moreover, with rapid urbanization and pervasive informal growth, electricity infrastructures are often strained resulting in poor quality access for ordinary people. As a result, residents compete, eventually straining overworked public infrastructure as part of what Bank

(2011) calls 'fractured urbanism', a notion which emphasizes the limits of the infrastructure relative to need at the same time as it points to the competition for it, and the multiple social consequences of this.

## **1.2 Urban Infrastructures as Sociotechnical**

There have been ongoing debates in the field of urban studies on the desirability or undesirability of 'formal' or 'informal' infrastructures in Southern cities (Baptista, 2018). While formal infrastructures are epitomized by Graham and Marvin's (2001) "modern infrastructural ideal" which frames these infrastructures as '...integrated, universal, ubiquitous, and seamless networks' (Baptista, 2018: 513). Jaglin (2016) through her notion of 'hybrid' infrastructures focuses on the 'improvisation', coexistence and co-production of 'formal' and 'informal' services and their significance in servicing the poor. In this body of work, urban infrastructures are conceptualized as sociotechnical processes in that they are situated, context specific and relationally co-constituted with the environment in which they operate (Baptista, 2018).

Taking a sociotechnical approach to urban infrastructure, (Star, 1999) argues that infrastructures are more than just an inert, taken-for-granted substrate upon which social life unfolds. Chiming with Star (1999), Hughes (2012), conceptualizes infrastructures as complex sociotechnical systems, born out of, and shaped by, the context in which they operate and which they also help produce. In thinking specifically about electricity infrastructure, sociotechnical approaches to infrastructure helps in exploring the ways in which electricity infrastructures are interwoven with how societies work and are spatially, materially, institutionally, and politically organized (Bridge et al., 2013).

Therefore, how electricity infrastructures are availed, to whom and where, provokes questions of justice and ethics (Sovacool and Dworkin, 2015). Moreover, electricity users are not mere rational economic actors balancing costs and benefits (Lutzenhiser, 1993). Instead, the social values of status, convenience and comfort are produced and reproduced through everyday social practices (Shove and Walker, 2014). By framing resident-made electricity connections through a sociotechnical approach, I emphasize

their relational co-constitution through/ with space, various combinations of actors, and diverse rationalities.

### **1.3 Making Infrastructure Relevant: Resident-made Electricity Connections**

Residents in South Africa are not passive victims in their struggles for electricity access. They engage everyday strategies to take charge of their own electricity inclusion by tapping electricity from Eskom transmission lines, hiring electricians to bypass Eskom pre-paid meters, and making homemade subnetworks to extend electricity to residents lacking access (Kirsch, 2005). They draw on complex 'sociotechnical assemblages' to 'adapt', 'modify', 'appropriate', 'pirate' and 'tinker' with Eskom electricity (Charlton, 2015; Simone, 2006; Kemerink-Seyoum et al., 2019). In this section I draw on a literature on resident-made electricity connections in South Africa to explore the strategies that residents engaged in to access electricity and the risks they endured. I close this section by drawing on Storey's (2021) 'implicit' infrastructures to think about the ways in which resident-made electricity connections were integral in allowing access for residents and yet dangerous and unsanctioned by Eskom.

There is a relatively thin body of work on ordinary people making electricity connections in South Africa. Resident-made connections are often framed in this literature as 'illegal', (Kirsch, 2005) or a 'counter-conduct' in the language of Massey (2014). Through this framing resident-made electricity connections are seen as an oppositional practice, involving direct contestation between Eskom and 'illegal' connectors. Resident-made electricity connections have also been framed in literature as a safety hazard (Louw and Bokoro, 2019).

Writing on the conflicts over 'illegal electricity connections' in Soweto, South Africa, Kirsch (2005) categorizes these connections along material, relational and temporal lines. Emphasizing the relationality of these practices, he shows how residents without official Eskom electricity connection liaised with neighbors with Eskom connection by attaching a conductor line on overhead cables or connecting their cables underground in secret.

To think of these electricity connections in temporal terms, Kirsch (2005) demonstrates how resident-made electricity connections were either permanent or temporary. Practices such as using bamboo sticks with metal conductors attached to the top and hooked on the conductors of overhead electricity networks constituted a temporary connection while permanent practices include manipulating Eskom transmission lines between official nodes of the electricity network by making other nodes which expand the network outwards (ibid). These categories help in thinking about the logics and materiality of resident-made electricity connections in Witsand.

Sometimes residents threw a charged electricity wire over a Telkom distribution network, livening up the wire and then taking single wire circuits off this wire to provide different houses with electricity which shows how resident-made electricity connections sometimes involved multiple infrastructures (Kirsch, 2005). In doing this, Eskom electricity infrastructure was the energy source while Telkom's infrastructure was the energy transmitter. Through this, residents integrated different infrastructures – electricity and telecommunications - to form a hybrid infrastructure (ibid). This provides a way not only to think about the complexity of these practices but also to consider relationalities between different infrastructures.

Kirsch (2005) also explores resident-made electricity connection in the form of home-made subnetworks. These connections emanated from Eskom electricity provided households and electricity connections constructed between these households, backyard shelters and informal houses. In doing this he provides a category of resident-made electricity connections that shows how residents adapted electricity infrastructure to multi-household living and differential electricity access

However, resident-made electricity connections have been contested in South Africa because of the dangers they present to the public (Kirsch, 2005). Apart from those involved in physically piecing together home-made connections suffering injuries and fatal accidents: sometimes, ordinary pedestrians and children succumb to the dangers of these practices. Characterized by worn out insulations of wires crossing streets and hanging from poles, these connections pose safety hazards. Temporary joints between cables and the installation of thin wires which are not rated for 230 volts often lead to fires sweeping through informal settlements (ibid).

In taking charge of their own electricity access, residents in South Africa draw on a set of linkages born from necessity that they craft themselves, appearing through use and context to be built into wider systems. Writing on self-made water infrastructures in Cape Town, Storey (2021:81) argues for a category of infrastructure that she describes as 'implicit'. She explains it as,

... a category of infrastructure that emerges from daily praxis: basic connections that are unclear in their relation to formal metrics or to systems themselves. This category – that of implicit infrastructure – names a set of linkages born from necessity and crafted by community, but which appear through use and context to be built into wider systems as assumed, potential or nebulous extensions.

In deploying the concept of 'implicit' infrastructure, Storey (2021) makes visible the ways in which resident-made infrastructure connections are necessary parts of the workings of infrastructure systems, and yet are not sanctioned pieces of the systems themselves. Situating 'implicit' infrastructures in the context of resident-made electricity connections, I build on this concept to substantiate how resident-made electricity connections prove a critical, although implicit, part of the wider electricity infrastructure system. By forging alternative forms of electricity access, residents lacking electricity access connected their houses to the Eskom grid, while others bypassed Eskom prepaid meters to access electricity for free which they would have otherwise not afford. To do this, residents merged both 'formal' and 'informal' technologies, blurring the 'formal' 'informal' divide. Yet these practices were both dangerous and unsanctioned by Eskom. Storey's (2021) 'implicit' infrastructure provides a key analytical tool to understand how resident-made electricity connections were integral in allowing access for residents and yet dangerous and unsanctioned by Eskom.

While research on infrastructure access on urban peripheries in Southern city contexts recognizes the agency of ordinary people in taking charge of their own infrastructure inclusion by co-producing hybrid infrastructures. Most literature on residents making electricity connections in South Africa frame these practices as either 'illegal' or 'dangerous' and rarely through the language of agency. Building on the notion of 'implicit' infrastructures as an analytical framework, in this thesis I draw on the materiality, logics and

relationalities of resident-made electricity connections to capture the distinctive categories encompassing the multiple strategies that residents in Witsand engaged in to access electricity. In doing this, I contribute to an understanding of the specific forms of agency associated with resident-made electricity connections. This study not only frames resident-made electricity connections as a site for resident agency but also textures the specific forms of agency across different forms connections. Drawing on the challenges of electricity access on the urban periphery, the following chapter explores the specific context of Witsand as an urban periphery. It examines the locational and developmental background of Witsand so as to situate the challenges of electricity access in the context of the study site.

## **Chapter 2: Examining Resident-made Electricity Connections in Witsand, Cape Town**

### **Introduction**

Despite Witsand being situated in an Eskom electricity supply area close to Eskom's Koeberg nuclear power station and the Open Cycle Gas Turbine (OCGT) Power Station, electricity access for ordinary people is an everyday struggle. Accommodating a multi-national, multigenerational community of over 10000 residents living in both informal and RDP houses, Witsand is situated on the North-western edge of the City of Cape Town, approximately 4km from the Atlantis suburb of Protea Park. Situated on the geographic and infrastructural margins of the CoCT and accommodating low-income residents, in this study I classify Witsand as an urban periphery.

Running East of Witsand is the R304, connecting the township with the N7, the major North-South route which links the Northern Cape Province to Cape Town. In the North-Westerly direction, Witsand is adjacent to residential suburbs namely: Atlantis, Westfleur and Avondale. While the Atlantis industrial area is adjacent to Witsand immediately in the Westerly direction, on the Eastern side, Witsand is surrounded by farms. Administratively, Witsand falls within Ward 32 of sub council 1 of the City of Cape Town. The map below shows the locational context of Witsand which is represented by the red triangle along N7.

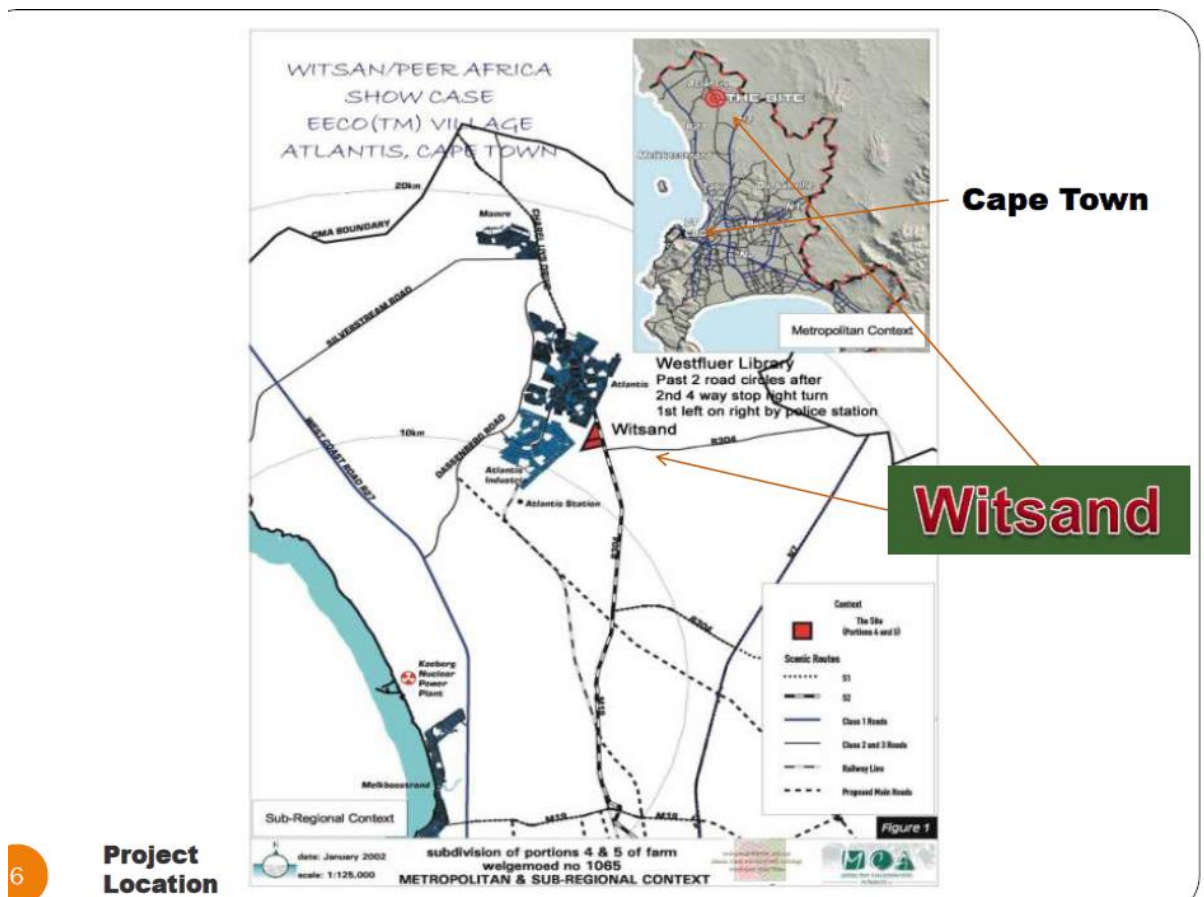


Figure 1: Map showing the locational context of Witsand.

Source: (Magida, 2013:78).

Having arrived in Witsand in February 2020, seeking to complete my two year Master’s degree at the UCT, I rented an RDP house together with three other families. On either side of the RDP house were zinc made houses, each of them accommodating a single family. Following a week of persistent electricity tripping in the RDP houses in our street, each household was summoned by the Street Committee to participate in an encounter against resident-made house dwellers living close by who were allegedly connecting electricity ‘illegally’, overloading the Eskom transformer and causing the electricity to trip. Being one of the males available at my household, I was expected to participate in the confrontation with resident-made house dwellers. It was from reflecting on the discomfort of participating in this protest that my interest in studying resident-made electricity connections was born.

Apart from the practical logic of Witsand being my place of residence for the 2 years of my postgraduate studies, immobilized by the various levels of a national lockdown in

the wake of the Covid-19 global pandemic. Carrying out my research in the place of my residence not only allowed me to experiment with a fine-grained ethnography. It also provided opportunities to explore the lived realities of everyday urbanism. Moreover, the character of Witsand as a low income, peripheral township integrating both formal and informal houses provided the complexity of a 'typical Southern city context'. It was from reflecting on these points that I selected Witsand as the study site.

## **2.1 Tracing the history to 'inbetweenness'**

Witsand is inbetween because there is formal and informal. It was informal but you have formal areas in Witsand, why because you have house numbers. How the City of Cape Town view Witsand depends on the Departments, someone can say Witsand is formal but not all of it is formal. Someone can say it's informal but not all is informal, so its inbetween (JC, WEHBSO official).<sup>2</sup>

Starting off entirely as an informal settlement in the 1990s with a few families occupying private land and building their houses with sticks, cardboards, zinc, and plastics. By 1994, the settlement had grown to a 1000 and surged to 6000 by the year 2002 (Magida, 2013). Some of the new Witsand residents - mainly Xhosa speaking - had migrated from the Eastern Cape to Cape Town in search of employment. After occupying land on sand dunes, east of Atlantis, they built their own houses. Others migrated from surrounding farms following job losses on farms and built their houses on nearby open spaces.

There were also residents who were from Atlantis, evicted from their houses after defaulting on their housing bonds payments, they also occupied land in Witsand and built their own houses. Others were former backyard dwellers in Atlantis who were either evicted by their landlords or took the opportunity to have their own houses (Magida, 2013). Located close to the Atlantis industrial area, Witsand also attracted a vast number of African migrants who came in search of employment.

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<sup>2</sup> Personal Interview with JC, 11 February 2021.

As such, the population in Witsand grew significantly between the 1990s and 2000. However, despite the population growth, the community lacked access to running water and electricity in their houses (Magida, 2013). Residents used paraffin and wood as their main energy sources. As a result, residents and civic organizations mounted pressure on the then Blaauwberg Municipality- the municipality under which Witsand fell under administratively- to provide housing and infrastructure services for the growing population (ibid).

This culminated in the initiation of the Witsands Human Settlement Project (WHSP) in 1999/2000 by the Blaauwberg Administration under the People's Housing Process (PHP) policy. The first phase of the WHSP aimed at building 400 RDP houses. Later the Witsand Housing Committee (WHC) which represented the community and facilitated the implementation of the WHSP became the Witsand IEEECO<sup>3</sup> Housing Beneficiary Support Organization (WEHBSO) after incorporating the IEEECO methodology. Following the creation of new municipal boundaries, the Blaauwberg municipality was amalgamated to create the CoCT. Witsand was then being administered under the CoCT. The CoCT took the role of developer and through its work together with WEHBSO more RDP houses have been developed.

Although a pronounced RDP housing stock was developed in Witsand, the delivery process was slow, and the houses were insufficient to accommodate the growing population. From 6000 people living in Witsand in 2002, to 10000 in 2013, population growth in Witsand was exponential (Magida, 2013). As a result, informal housing developments emerged concurrent with the RDP housing provision both as infill and as completely new developments. The resulting housing landscape is one that is characterized by a complex enmeshing of RDP and informal houses making Witsand a settlement in-between 'formality' and 'informality'.

## **2.2 Mapping a Spatial and Temporal Geography of Electricity Access**

Between the 1990s and 2004 when Witsand was still entirely characterized by informal houses, there was no Eskom electricity provision in the settlement. Residents used alternative sources of energy such as wood and paraffin. However, with the introduction

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<sup>3</sup> IEEECO stands for Integrated Energy Environment Empowerment Cost Optimization

of the RDP houses in Witsand from 2005 onwards, Eskom provided electricity infrastructure exclusively for new RDP houses (Magida, 2013). Lacking access to Eskom electricity infrastructure, most informal house dwellers resorted to tapping electricity from the Eskom infrastructure that was intended solely for RDP house dwellers. This caused tensions between RDP and informal house dwellers as the RDP house dwellers accused the informal house dwellers of overloading the electricity infrastructure system and causing electricity to trip in their houses (Luhanga, 2017).

Residents and WEHBSO organized around these issues and engaged the CoCT for resolutions. This was coupled with a change in government policy which saw the inclusion of informal settlements in national official documents such as the Policy Guidelines for the Electrification of Unproclaimed Areas, the Integrated National Electrification Programme, and the Energy White Paper in 2011. Traditionally, the Integrated National Electrification Programme (INEP) focused only on electrifying formal housing in rural and urban areas. However, due to the growing trend of increasing informal housing developments and the Constitutional right of all citizens to basic services, the Department of Energy was obligated to ensure electrification of informal settlements as well. In line with the Energy White Paper, Government supported the electrification of residential and unproclaimed / informal areas. The result was national, provincial, and local impetus to electrify informal houses in Witsand. Eskom's provincial spokesperson, Jolene Henn, noted that Eskom was concerned with the illegal connections in Witsand and said,

“We've explained the detailed process to the community, and we are currently busy with the electrification of identified pockets within Witsand. ... Zone 8 is referred to as Witsands informal phase 2 in Eskom's electrification plans in the 2018/19 electrification design to be executed in 2019/20” (Luhanga, 2017:4).

In making these comments, Eskom's provincial spokesperson outlined how the Electrification of informal areas was to be implemented in Witsand. Through this intervention the challenges of electricity access in Witsand were being framed mainly as a lack of connection to the Eskom grid that could be resolved by connecting as many houses to the electricity grid as possible.

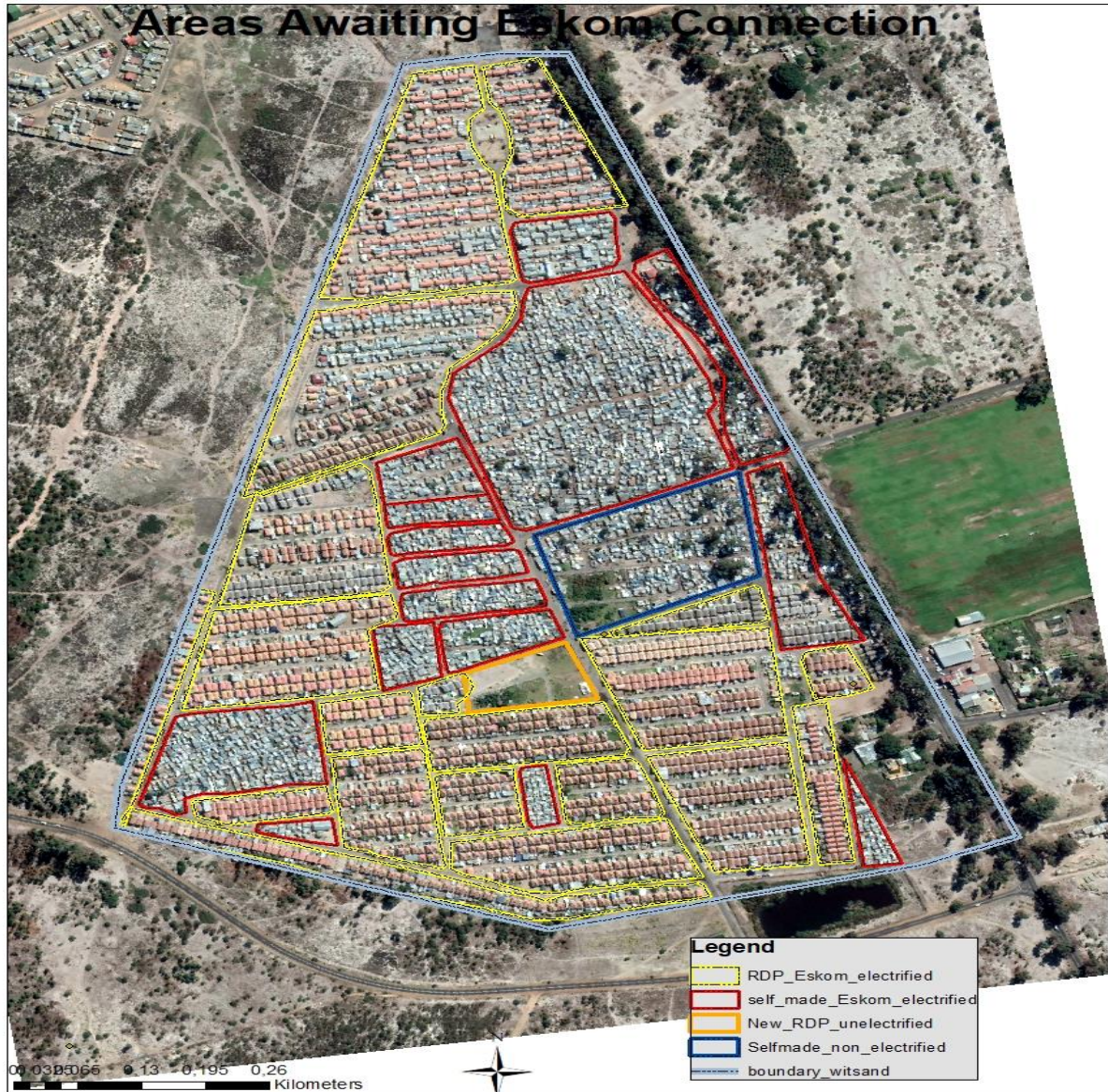


Figure 2: Map showing heterogeneous electricity access in Witsand.

Source: (Author, January 2021).

The map above shows Eskom electrification across multiple housing types. With the implementation of the Witsand informal houses electrification programme starting in 2017, by the end of 2020, most informal houses in Witsand were Eskom electrified. As a

result, in Witsand there were Eskom electrified RDP houses depicted in yellow and non-Eskom electrified RDP houses depicted in orange. There were also Eskom electrified informal houses shown in red and non-Eskom electrified informal houses depicted in blue. Despite Eskom electrifying most houses, both RDP and informal, resident-made electricity connections persist, some of the reasons for this will be explored in Chapter 3. While living and documenting the electricity infrastructural experiences of my place of residence – an RDP house with a backyard and frontyard structure. My ethnographic work also covered participants from RDP, RDP with backyard/frontyard structures as well as informal houses. The section below details the specific methods engaged in conducting the ethnographic work underpinning this research.

### **2.3 An Ethnography of Resident's Electricity Infrastructural Experiences**

At this portentous moment where questions of ethics in research can be the difference between whether or not the research process perpetuates the spread of the coronavirus pandemic. In this research, I was committed to minimizing potential physical, psychological, and emotional harm both to research participants and myself that could directly or indirectly emanate through the research process. In choosing Witsand, my place of residence as my study site, I minimized travelling throughout the research process. In doing this I proactively reduced the risk of transmitting the virus between different places.

Moreover, I complied with all the necessary ethical requirements set out by the Faculty Research Ethics Committee (FSREC) and the University of Cape Town protocol on coronavirus. Wherever possible I minimized physical contact with research participants through the research process. To do this I limited the number of in person interviews and conducted my semi-structured interviews via WhatsApp or phone calls. On occasions where I engaged in person interviews, I made sure that the interviews were done in open air and keeping a social distance of at least two meters between persons. Furthermore, I also carried masks with me both for myself and for research participants. In addition, I brought alcohol-based hand sanitizers wherever I went, applying it frequently and availing it to the research participants. The FSREC Approval letter sets out all the conditions complied with while compiling this research.

Apart from these Covid-19 specific measures, this research also complies with privacy and confidentiality requirements. Participants' information was only collected and used following their due consent indicated by them signing the consent form. Moreover, participant's identities were protected by replacing their names with pseudo-ones and deliberately taking images that did not show people's faces.

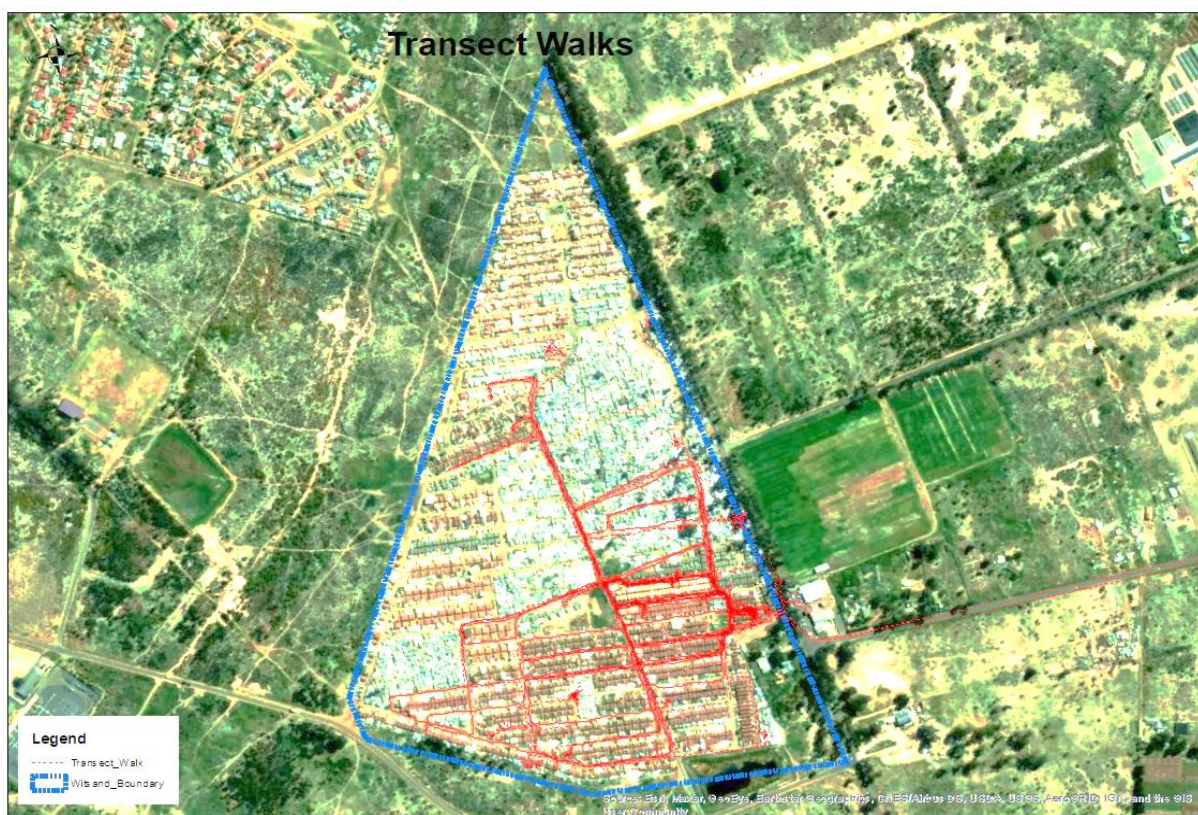
This thesis is based on a fine-grained ethnography carried out in Witsand between 2020 and 2022. Larkin (2013) notes that ethnographic work on infrastructure explores the processes of enrollment in, or exclusion from, progressively neoliberal systems of access in the Global South. In conducting this ethnography, I employed specific qualitative methods namely: journaling, transect walks, participant observations, non-participant observations, semi-structured interviews, participatory mapping and document review (Berg, 2004).

After being summoned by my Street Committee to participate in a protest resident-made house dwellers who were allegedly connecting electricity 'illegally', it was reflecting on this experience in my field journal that formed an important first step in my ethnographic work. From there, journaling became a critical component of my methods. In my journal I recorded my own households' electricity infrastructural experiences, information such as: moments when electricity tripped and household members' responses. I also recorded the various practices that my own household engaged in to access electricity. The journal was also a useful space to reflect on the everyday struggles of electricity access in Witsand such as cases of houses burning or stories of people getting electrocuted while attempting to make electricity connections.

While making reflections through my field journal I also carried out transect walks where I traversed the study area and recorded observations. Transect walks were critical for me to determine the mix of empirical focus while taking seriously the heterogeneous nature of housing and electricity access in Witsand. Furthermore, transect walks were also essential in mapping out the geography of electricity access in Witsand. Being a resident of Witsand, familiar with the settlement, I started by traversing streets that I had previously observed to be having resident-made electricity connections. This was

followed by recording my everyday tracks around the settlement and making observations of how residents were making, using and contesting electricity connections in Witsand. I continued with this practice throughout the course of my research.

To record the transect walks on a map, I used an android mapping application known as Avenza maps. After inputting a map of Witsand in pdf format onto the application, I recorded all my walks in the settlement on the application as tracks marked on the map. As I walked, I also added placemarks to indicate important observations such as externally visible resident-made electricity connections and house types. These were later triangulated using participatory mapping where interviewees mapped resident-made electricity connections from their imagination. The map below shows all the transect walks marked by the red tracks on the map. The red tracks show all the walks that I did during the course of the research. I recorded my everyday walks around the settlement while making observations on resident-made electricity connections. As can be seen from the map, my walks covered almost the entirety of Witsand, encompassing RDP, RDP with backyard/frontyard structures as well as informal houses.



*Figure 3: Map showing transect walks in Witsand.*

*Source: (Author, January 2021).*

I also took pictures through Avenza maps which depicted the phenomenon denoted on the placemarks. These transect walks, complemented by non-participant observations informed my categorization of the housing typologies in Witsand as: RDP, RDP houses with backyard structures as well as informal houses. This was also central in identifying households to engage through semi structured interviews.

To analyze the map generated through the Avenza mapping exercise during transect walks, the output from the mapping exercise was exported to a Geographic Information Systems map (GIS). After overlaying the points picked in the transect walks - of houses and locations of resident-made electricity connections- I mapped the geography of resident-made electricity connections.

By complementing transect walks with observations, I fleshed out the materiality of resident-made electricity connections. This involved observing residents' material practices in piecing together electricity connections as well as the socio-political networks they drew on. Non-participant observations were also particularly useful in exploring the ways in which electricity access was contested in Witsand. This involved observing how residents encountered Eskom and each other over electricity access. Such observations were recorded in a field journal.

Another method key to the ethnographic work was participant observations of ordinary people making, using, and contesting electricity access in Witsand. Wherever ethically permissible, I participated in some of the practices that residents undertook in connecting electricity to their houses. This included assisting in pulling up electricity breakers when electricity tripped, helping households send emails to Eskom during electricity blackouts, attending community meetings and movements related to electricity access. Both residents' and my experiences were recorded in a field journal. Through these practices, I pieced together the various strategies that ordinary people engage in to access electricity in Witsand, the networks they drew on and the precariousness of their practices.

With the experiences of both participant and non-participant observations recorded in a field journal. I analyzed this material by reflecting on my experiences as well as the content of the diary. Triangulating these observations with the material from transect

walks, document review and semi-structured interviews, I conducted a thematic analysis of the content from the field diary. After reflecting on the content from the field journal, I noted down key themes that were emerging.

Semi-structured interviews with residents, community electricians and WEHBSO officials were also essential to the ethnographic work. Given the Covid-19 pandemic, I conducted some of the interviews via call or WhatsApp. Building on observations from transect walks, I purposively interviewed residents from different housing and electricity access backgrounds. Interviews were conducted with residents living in: Eskom electrified RDP houses, non-Eskom electrified RDP houses, RDP houses with backyard structures, Eskom electrified informal houses and non-Eskom electrified informal house dwellers. Layering interviews in this way formed an important platform for conducting comparative analysis of resident-made electricity connections across different houses.

Using an interview guide to partly structure the interview process, I interviewed residents on how they made, used, and contested for electricity access in Witsand. To engage WEHBSO officials on the history of Witsand and the struggle for electricity access in the settlement, I also used semi-structured interviews. Semi structured interviews were essential in engaging with community electricians over the materiality of resident-made electricity connections. Most interviews were audio recorded – after respondents consented to it - but were also complemented by a field diary wherein I recorded electricity practices as field notes. These interviews were conducted between 2020 and 2021 in Witsand with forty-one people (thirteen females and twenty-eight males).

The output from the semi structured interviews were audio recordings and field notes. Firstly, I transcribed all the audio recordings in verbatim. The transcription process produced a manuscript for each interview. The manuscripts were then combined into a single document which was exported to NVivo 12 software package. After automatically coding the manuscript, the software first ran a word frequency query count to find all the key words from the interviews. The same process was done for the field notes. After collecting all the key words, next I organized these into themes by bundling similar words into specific categories.

Finally, this research also involved extensive document review. Apart from a literature review, newspaper articles were also critical in exploring stories of resident-made electricity connections in Witsand as well as Eskom's responses to these practices. Other documents reviewed in this thesis include policy frameworks, reports, and Acts of parliament. These include the Electricity Suppliers Liaison Committee reports which detail some of the practices that residents in South Africa engage in to access electricity. I also reviewed the Policy Guidelines for the Electrification of Unproclaimed Areas, the Integrated National Electrification Programme, and the Energy White Paper in 2011.

To review documents used in this research namely literature, newspapers, Acts of Parliament and policies, I engaged textual analysis. This involved running word frequency counts. Other methods involved highlighting key parts of the document reflecting on them and comparing with text from other documents. In some cases, NVivo 12 was also used to run word frequency counts to hone in on important words and themes.

While this research was born out of the uncomfortable experience of being coerced to participate in a protest against resident-made electricity connections. It was this experience that animated the key question of how ordinary people make, use and contest electricity infrastructure in Witsand which sits at the heart of this research. In grappling with this question, I engaged a fine-grained ethnography which explored the everyday electricity infrastructural experiences of ordinary people. In this ethnographic work I employed specific methods such as journaling, transect walks, participant, and non-participant observations as well as semi-structured interviews. By living in the study area over a relatively extended period, I was able to understand the lived experiences of electricity access in Witsand. While doing this, I took seriously the possible risks that this research could present in light of the Covid-19 global pandemic. The culmination of this work are multiple stories of Witsand residents' everyday electricity infrastructural experiences which will be explored in the following chapters. The next chapter explores the layered challenges that Witsand residents experienced in accessing electricity.

## **Chapter 3: The Layered Challenges of Accessing Electricity in Witsand**

### **Introduction**

For some residents living in Witsand, electricity access is an everyday struggle. From living in non-Eskom electrified houses, failing to afford Eskom electricity vouchers to enduring pervasive electricity tripping, the challenges of electricity access in Witsand are multi-layered. Although Witsand is a space in-between, characterized by a complex enmeshing of both RDP and resident-made houses, most houses have undergone Eskom electrification. However, having houses connected to the electricity grid does not guarantee electricity access as some residents cannot afford recharging through the Eskom prepaid meters. This chapter explores the layered challenges of accessing electricity in Witsand. To do this, it examines the multifarious experiences of residents in accessing electricity in varied housing contexts namely: RDP, backyard and resident-made houses.

### **3.1 Living off the Grid: Residents Waiting for Eskom Electrification**

Forced to piece together wires and connecting them to nearby Eskom electricity lines, some residents in Witsand live in houses lacking official Eskom connection to the main electricity grid. While it is easy to associate resident-made electricity connections with resident-made houses, in Witsand there were RDP house dwellers who tapped electricity directly from Eskom lines. This section explores the experiences of residents living in non-Eskom electrified RDP and resident-made houses.

Living in a non-Eskom electrified RDP house, SK was renting a recently completed RDP house with his wife and son. After migrating from Johannesburg to Witsand in 2016, he had been living in that house for over two years without Eskom provided electricity. Even though the house was completely tubed with electricity wires and provided with an Eskom box, it was not connected to the Eskom electricity grid. As a result, SK and his family could not access electricity without forging alternative modes of access. Meanwhile, they needed electricity access to advance a viable urban life. Commenting on his need for electricity access, SK noted that,

It [not being connected to the Eskom grid] was affecting us because if you do not have electricity, you are stuck. You have to think about other means, for lighting, cooking and obviously there is no TV.<sup>4</sup>

To access electricity, SK resorted to hiring an electrician recommended to him by his landlord to tap electricity from the nearest Eskom pole. He noted that all the residents occupying the new RDP houses in his street had the same experience of not having Eskom provided electricity. He said,

You see these houses from here up to the top there, these houses are all new, we are still awaiting boxes. It can take a year or two or more for us to get the box, so we are still waiting. We tried to connect with the neighbor but that one is far, so they advised that we use poles.<sup>5</sup>



*Figure 4: Non electrified RDP houses tapping electricity from Eskom poles.*

*Older resident-made houses Eskom electrified (left), newer RDP houses (right) non-Eskom electrified, dwellers tapping electricity (Source: Author, January 2021).*

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<sup>4</sup> Personal Interview with SK, 6 January 2021.

<sup>5</sup> Personal Interview with SK, 6 January 2021.

The image above shows older Eskom electrified resident-made houses to the extreme left and the new RDP houses in SK's street – across the road to the right – which were still waiting for Eskom electrification. Explaining why the new RDP houses were not Eskom electrified, JC an official at WEHBSO<sup>6</sup> noted that this was because these houses were still technically in the building phase. Once the houses were allocated, some beneficiaries either occupied or rented them out before they were provided with Eskom electricity. The process for new houses getting Eskom electricity sometimes took as long as three years. JC noted that this was because Eskom only electrified after a target number of houses had been reached. He noted that,

The new houses that do not have electricity, [those houses] are still on the building phase. They cannot build two houses and put into those two houses [electricity] because the contractor there they must give him a certain number.<sup>7</sup>

When a house was completed, it had to wait for other houses in its batch to be completed before it would get Eskom electrification, despite sometimes being occupied. After occupying the new RDP houses, some residents in Witsand used self-provided forms of electricity access. Resident experiences in the new non-Eskom electrified RDP houses makes visible the gaps in the housing and service delivery process – where residents perpetually wait for an RDP house and when it comes, they must begin another cycle of waiting for electricity.

Analytically, RDP houses with resident provided forms of electricity provokes a rethinking of formal versus informal as analytical categories. SK's experiences reflect how his formal house was intricately connected to informal electricity access practices and formality and informality were bound up within each other in complex ways between the house and the Eskom electricity grid. This supports Roy's (2011) argument that informality should not be understood as fixed to the slum but rather as an organizing logic visible in the diverse landscapes of Southern cities.

Having similar experiences of living in houses lacking Eskom electrification are dwellers of non-Eskom electrified resident-made houses. Dwelling in makeshift houses made of complex bricolages of zinc, wood and plastic, dwellers of these houses were also waiting

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<sup>6</sup> A local community NGO facilitating the Witsand housing subsidy programme.

<sup>7</sup> Personal Interview with JC, 11 February 2021.

for Eskom to electrify their houses. Unlike dwellers of RDP houses living in houses without Eskom electrification, dwellers of resident-made houses were not only waiting for Eskom electricity - they were also simultaneously waiting for RDP houses. Interviewee KM, a resident in Witsand explained how resident-made houses were part of the process by which residents waited for RDP houses said,

From my understanding, you have to stay illegally in an *ityotyombe*<sup>8</sup> so that you can graduate to an RDP house. So, if you don't want to stay in *ityotyombe* you also don't want to stay in RDP. While you are living in *ityotyombe* you need electricity, and no one is going to give you electricity for free.<sup>9</sup>

However, after building their houses, these houses would initially be lacking official Eskom electricity and it took time before Eskom would electrify them. Waiting for Eskom electrification, residents needed electricity to get by. Commenting on his need for electricity in resident-made houses, interview BB (a single male renting a resident-made house) said,

If people had sufficient housing, they would not go through the illegal route. Because I don't have a house, I have to live in a *mkhukhu*<sup>10</sup> but I also want electricity, I also want services and I also want to watch TV. This would force me because I don't have anywhere to live but I also want to access these facilities, that's why people end up living illegally.<sup>11</sup>

BB explained that even though residents living in non-Eskom electrified resident-made houses were sometimes not connected to the Eskom grid, they also needed electricity. Renting a non-Eskom electrified resident-made house, interviewee DK had migrated from the Eastern Cape in search of employment. He said that apart from needing electricity as a basic urban service, electricity access was essential to resident-made house dwellers in a special sense. Resident-made houses being predominantly rigged together from corrugated zinc iron sheets, they were very hot in hot weather and very cold in cold weather. With the harsh winters of the Western Cape, these houses were unbearably cold. Commenting on this, DK said,

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<sup>8</sup> 'ityotyombe' is Xhosa name for shack, a house made of zinc.

<sup>9</sup> Personal Interview with BB, 31 December 2020.

<sup>10</sup> 'mkukhu' is a Xhosa name for shack, a zinc made house.

<sup>11</sup> Personal Interview with BB, 31 December 2020.

The problem comes in winter because the *hokkies*<sup>12</sup> are cold and you would have to sleep with the stoves on. Even the transformers they overload because people always connect on the poles. Even in the day you must keep the stove on because the *hokkie* is very cold. There is nothing you can do, we came in this environment it was like that, we are not gonna change anything.<sup>13</sup>

To keep these houses warm and habitable, dwellers of resident-made houses had to keep stoves and heaters on. However, being unconnected to the Eskom grid they found alternative ways of warming their houses. Interview GR, a community electrician noted that, in some cases, residents resorted to using substitute sources of energy such as gas, wood, candles, and paraffin. However, most residents in these circumstances frequently tapped electricity directly from Eskom electricity transmission lines. Such were the practices of interviewee DK and his neighbors who were living close to the taxi rank in one of the few sites still awaiting Eskom electrification. Explaining why he could not live without electricity when Eskom poles and transformers were close by, he said,

I can't watch someone having electricity of which I don't have electricity. We are staying in the same South Africa. Even they are staying in an RDP house, they have electricity let me go there and get electricity.<sup>14</sup>

For DK, his sense of citizenship was shaped by his access to basic services. He read differential access to Eskom electricity between him and RDP house dwellers as reflecting differential forms of citizenship which favored RDP house dwellers while marginalizing him. His experiences were resonant to Kirsch's (2005) argument who notes that disconnection from the Eskom grid mirrored a disconnection from citizenship.

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<sup>12</sup> 'hokkie' is an Afrikaans name for shack, zinc made house.

<sup>13</sup> Personal Interview with S, 13 January 2021.

<sup>14</sup> Personal Interview with S, 13 January 2021.



*Figure 5: Resident-made houses tapping electricity directly from Eskom transmission lines. (Source: Author, January 2021).*

The image above shows one of many resident-made houses tapping electricity from the Eskom pole. Multiple electricity wires pieced to the Eskom pole, came through a tree and then to the house. Tapping Eskom electricity was primarily because these houses were not yet connected to the electricity grid. However, not only did residents in these houses require electricity as a basic service. Electricity access was critical in warming the house and making them livable thus sustaining the housing infrastructure. The experiences of non-Eskom electrified resident-made house dwellers show that residents did not only ascribe a practical value to electricity access, rather being connected to the Eskom grid had a symbolic importance. While being connected to the Eskom grid signified modernity and an advanced way of life, being unconnected symbolized marginalization.

### **3.2 Keeping up with electricity cost: Affording Eskom vouchers**

The period between 2017 and 2020 saw Eskom electrify most unelectrified resident-made houses in Witsand. Nevertheless, residents living in resident-made houses persisted in making their own connections regardless of having Eskom electricity provision. This suggests there are other factors underpinning electricity access besides being connected to the Eskom grid. Residents' experiences in Witsand show that one of the

key challenges militating against electricity access is that of the unaffordability of Eskom provided forms of electricity relative to residents' incomes and livelihoods. This section explores the experiences of Eskom electrified RDP and resident-made house dwellers. It examines the systemic challenge of being connected to the Eskom grid and yet being unable to afford the Eskom vouchers.

The experiences of interviewee MD shows how even though she was now living in a newly electrified resident-made house, she was using gas to cook as she could not afford cooking with an Eskom electricity powered stove. MD was a single mother of two living in an Eskom electrified resident-made house who only used her newly acquired Eskom electricity for lights, fridge, and television. To cook, she used a gas stove because it was faster and cheaper for her. She had migrated from the Eastern Cape to Kulis River where she was lived in her sister's RDP house and recharged through the Eskom meter. Seeking her own home, on 14 November 2014 she moved to Witsand, and, upon her arrival, she rented a resident-made house. With the help of her brother, she was able to access her own plot and build a two roomed zinc house.

After initially tapping electricity directly from Eskom poles, in 2017 she was approached by Eskom who proposed to electrify her house. They requested her name, house number and certified copy of national identity card (ID) which she provided. It took two years for Eskom to electrify her house and in the meanwhile she combined tapping Eskom electricity with using alternative forms of energy such as candles and paraffin. By the end of 2019 she had full Eskom electricity. She said the new Eskom meter was positive for her in that it was not 'risky' for her children, and she could buy a television for her young family as well as connect her fridge to support her chicken and sausage business. However, recharging through the Eskom prepaid meter was too expensive for her and whenever she would recharge, the electricity would not last. This forced her to use a gas stove for cooking, MD said that,

I am not cooking with electricity; I am only using for light and also for fridge. The problem is that electricity is on and off on and off. I have a lot of people and it's too expensive. If I buy the electricity for R50 at the end of the month, it's gone. Its better

if I can buy the electricity for R100 but the electricity units are still too small, that is why I resorted to cooking with gas.<sup>15</sup>

MD's experiences show how unaffordability of Eskom electricity relative to residents' livelihoods is one of the key challenges in accessing electricity in Eskom electrified resident-made houses. Even though, MD's house received Eskom electricity she used alternative sources of fuel to cook because she could not afford cooking with Eskom electricity. Her experiences show that while electricity can be available for resident-made house dwellers to use, it can be inaccessible when residents cannot afford the Eskom electricity vouchers.

Inability to afford Eskom provided electricity was not only an experience of residents of Eskom electrified resident-made houses. Some RDP house dwellers also found Eskom electricity expensive relative to their livelihoods. In some cases, residents stay in their houses without electricity not because they were not connected to the Eskom grid but rather due to their inability to afford recharging through the Eskom prepaid meter. In these circumstances they often resorted to alternative forms of access.

Interviewee BT, a Zimbabwean migrant struggled to afford recharging through the Eskom prepaid meter even though he was renting an RDP house fully connected to the Eskom grid. BT, his wife and two children shared a two bedrooled RDP house with MV and his family of four who used the other bedroom. These numbers fluctuated as there would often be extended family that would frequently visit the house. BT's mother in-law visited in April 2020, only to leave in October of the same year. Upon her departure she was replaced by BT's sister in-law who moved in in November 2020. The following month, BT's mother, sister, and niece also moved in while one member of MV's family moved out, making it a total of eleven people living in the RDP house by January 2020. In the same yard there was also a zinc made structure housing two people in the front while a similar structure at the back housed another family of four, making a sum of seventeen people living in that yard. With seventeen people living on a single plot, electricity consumption was relatively high, reaching over 40 units a day which would cost R60.

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<sup>15</sup> Personal Interview with MD, 7 January 2021.

However, BT was the only member of the household who was employed, and his employment was also precarious. All the other members of the household remained at home, a situation compounded by the covid-19 pandemic and national lockdown.

Given the electricity consumption pattern of the entire household, recharging with Eskom vouchers demanded BT to contribute R800 towards electricity. Considering BT's employment and income, R800 towards electricity alone consumed a substantial proportion of BT's income apart from the R1400 he contributed towards rent. As a result, BT struggled to recharge through the Eskom meter and sometimes they would spend days without electricity as he did not have the money to recharge the electricity. Conflicts over contributions towards electricity were common at BT's house as residents tussled over whose turn it was to recharge the electricity. In the end, BT was advised by his friends to try recharging with cheaper electricity vouchers from the black market to cut the cost of electricity access.

BT's experiences make visible the challenges of affording electricity in Eskom provided RDP houses. His experiences reveal the lived realities of living in Witsand where residents survive on precarious livelihoods and live as multiple families on single plots. These living arrangements have implications on electricity consumption and cost. Given these circumstances some residents struggle to afford Eskom electricity. As a result, they lack access to Eskom electricity even though their houses are connected to the Eskom grid.

### **3.3 The limits of a 20 Amp Eskom Connection**

Most houses in Witsand, both RDP and resident-made are Eskom electrified. However, although each house is provided with a 20 Amp electricity connection, this is significantly deficient relative to the lived realities of multi-household living and electricity demanding homebased enterprises in Witsand. This gap between Eskom provision and household electricity use patterns manifests itself in frequent electricity tripping in both RDP and resident-made houses. To manage the tripping, most residents have cooking rosters where they take turns to cook to prevent overloading the system while others hire electricians to increase electricity current in their houses. This section explores the mismatch between Eskom's 20 Amp connection and the lived realities of multi-household living and homebased enterprises.

Integral to multi-household living arrangements in Witsand are external houses that sit either at the front or the back of RDP houses. While these houses are often rented out by landlords for rental income or used to accommodate extended family, they impacted electricity access in these houses. In most cases, electricity was extended from the RDP houses to external structures outside. One of the severe repercussions of this practice is that of electricity tripping. The figure below shows an image of backyard houses and electricity being extended from RDP house to backyard house through an adapter.



*Figure 6: Electricity extensions to backyard houses.*

*The image on the left shows backyard houses in an Eskom electrified RDP housing area, the one on the right shows wires connected in the Eskom box in the RDP house and extended outside to backyard houses (Source: Author, January 2021).*

Interviewee MK, an electrician in Witsand notes that multifamily living disrupts the assumptions underlying Eskom provision of a nuclear family per plot. Eskom provides a 20 Amp electricity connection for each house to support a single family. However, the lived reality is that most plots in Witsand house multiple families and the 20 Amp Eskom provision is significantly deficient and this manifests itself in excessive electricity tripping.

Electricity tripping is a common experience among residents in Witsand and this is especially true for residents living in RDP houses with backyard structures. During my experience of living in Witsand in an RDP house with two resident-made houses at the back and front of the house, only two appliances could be switched on at a time, connecting a third one resulted in electricity tripping. If the electricity tripped twice and users did not unplug, if it tripped the third time, the electricity switched off for thirty minutes to an hour. This experience of tripping led residents to the common practice of taking turns to cook.

Interview ST shared an RDP house with a family of four in a yard that had zinc structures on either side of the plot. There were usually seven people living in the RDP house and five people living in the external structures making it twelve people living in the yard. However, this number easily soared up to seventeen when extended family visited. At STs' household they had connected an adapter on the Eskom box inside the RDP house and extended it for dwellers of external structures to connect. At this house, electricity tripping was severe and like most houses in Witsand characterized by multi-household living, households had developed a cooking roster to manage the tripping as they could only switch on two appliances at a time despite four families living at the plot.

Households at this house agreed that one family which shared the RDP house with ST would cook first from 18.00 to 19.00 since the husband in that family worked a night shift and needed his food to be prepared timely. From 19.00 to 20.00 the lady in the backyard house had the opportunity to cook as she came back from work at 18.00 started off by bathing followed by cooking. Interviewee ST would get the chance to cook from 20.00 to 21.00 since she was single and flexible on her cooking schedule.

Apart from the 20 Amp Eskom connection failing to support multi-household living in Witsand. It was also unresponsive to the realities of electricity demanding homebased industries. In Witsand, both RDP and resident-made houses not only functioned as shelter, but they are also workshops where residents engage in various enterprises which include sewing, baking and welding. However, the current Eskom provided 20 Amp connection did not support such activities. Using electricity for these practices often resulted in pervasive electricity tripping and household conflicts.

Interview JB was a single male renting a room in a four roomed structure that was situated adjacent the main RDP house. The landlord used the RDP house while four families occupied the external house making it five families on the plot. At JB's house, electricity tripping was pervasive. Only a single water jug could be switched on at a time. Switching on two water jugs simultaneously resulted in electricity tripping. If it tripped twice without unplugging, tripping the third time would result in electricity going off for almost an hour. Similar to STs' house, they also had to take turns to use the electricity.

Electricity tripping at JB's house was exacerbated by the fact that one of the tenants ran a sewing business where he frequently ran his electrical sewing machine. This increased the challenges of electricity tripping and sparked conflict with other households who argued that the sewing machine not only worsened electricity tripping, but it also consumed a lot of electricity units. As a result, the tenant with the sewing machine ended up vacating that house.

Living in an RDP house with his wife and children, resident RS ran a welding business where he made steel doors, gates, and chairs while his wife sold ice cream at the community market. Both these enterprises required electricity which exceeded the 20 Amp Eskom provision in RDP houses. Connecting his welding machine on the current Eskom electricity provision resulted in excessive tripping, not only in his house but also in his entire street. He hired an electrician to tamper with the Eskom electricity so that he could get more electricity to his house. After successfully increasing the electricity amperage, RS later encountered Eskom who challenged his practice and threatened to disconnect his house. RS' experiences show that even though the RDP house was fully furnished with a 20 Amp electricity connection, this was inadequate to support his business.

For resident RS, tampering with Eskom electricity was to increase the electricity amperage at his house so that he could adapt his electricity access to support his homebased enterprise. The current 20 Amp Eskom electricity provision in RDP houses reveals how Eskom relegates the function of houses in Witsand to mere accommodation for nuclear families. However, RS' experiences show that houses in Witsand also function as places of enterprise. To span the chasm between Eskom provision and his specific needs RS tampered with Eskom electricity.

In conclusion, while residents in Witsand appreciate the importance of electricity access both for its practical and symbolic value, it is an everyday struggle for most residents in Witsand – both RDP and resident-made house dwellers. From living disconnected from the Eskom grid and failing to afford Eskom vouchers to experiencing pervasive electricity tripping, electricity access for ordinary people remains elusive. Residents' experiences in Witsand show that even though most houses have been Eskom electrified, both RDP and resident-made, availability of Eskom electricity does not entail electricity access as affordability and quality of access determines the utility of the electricity for residents. However, while the layered challenges constraining ordinary people's access to electricity in Witsand reflect the systemic inequalities and electricity exclusion in a post-apartheid South African city. Residents' everyday practices in piecing together wires, assembling connections and reworking Eskom electricity to respond to their lived realities offer hope in a place of despair.

## **Chapter 4: Residents Making Electricity work**

### **Introduction**

From piecing together electricity wires and connecting them to Eskom transmission lines to tampering with Eskom prepaid meters and recharging with cheap black market electricity vouchers, resident-made forms of electricity access in Witsand involved circumventing, adapting, and appropriating. Some residents circumvented the cost of Eskom vouchers by either recharging with cheaper black-market ones or hiring an electrician to bypass the Eskom prepaid meter. Adapting encompasses residents' practices in extending electricity from one house to another, replacing Eskom wires with thicker ones to increase electricity current and support electricity demanding homebased enterprises as well as installing private prepaid meters to decentralize electricity recharging to each household in multi-household living arrangements. Finally, appropriating encompasses the externally visible practices through which some residents drew electricity directly from Eskom transmission lines. This chapter explores the diverse ways through which residents exercise their agency by taking electricity access into their own hands. It does so by examining the materiality and relationalities of resident-made electricity connections in Witsand.

### **4.1 Circumventing: Black-market vouchers and Bypassing Eskom Meters**

Some residents in Witsand engaged in practices which involved circumventing Eskom's mediating technologies, namely: electricity vouchers and prepaid meters. Epitomizing these strategies were the practices of residents in buying cheap black market electricity vouchers. This practice was engaged in by residents in both Eskom electrified RDP and resident-made houses. It involved residents drawing on complex social and institutional networks to pay around R0.40 for each electricity unit compared to the over R1.40 that was paid for when recharging using Eskom vouchers.

Interviewee BT was renting a two bedroomed RDP house with his wife and two children and shared the house with MV and his family of four. With frequent extended family visits, his household could easily swell up to ten members despite BT having precarious

employment, earning less than the South African minimum wage of R3500 a month. Given his circumstances, BT sought to cut the cost of accessing electricity by buying cheaper black-market electricity vouchers. With the practice recommended to him by his workmate, BT's first step was to acquire the contacts of people who sold such electricity. This was relatively easy as his workmate furnished him with these. He noted that these contacts were easily accessible since they freely circulated in Witsand community WhatsApp groups.

Interviewee BT explained that, while some of the individuals involved in selling these black-market vouchers lived in Witsand, some of the contacts lived as far from Witsand as Johannesburg. After securing the contacts, next was contacting the individuals and placing an order. He waited for a response and while waiting, BT recharged with Eskom vouchers which cost the household almost R60 a day for the over 40 units of electricity that they consumed at that house. After waiting for three days, BT received an electricity voucher from his contact. He recharged it first and after it was successful, he made a bank transfer to his contact to pay for the electricity. From April to September 2020, BT's household used to buy 1100 units of electricity for R450. This later changed around October 2020 where R450 could only buy 600 units.

At some point between March and December 2020, BT once received a black-market electricity voucher that could not recharge. He had to revert to the person who had sent him the voucher until he received a voucher that recharged. The whole process of buying the black-market vouchers was based on trust. The buyer took the chance and trusted the seller that they would send the electricity voucher. The seller also took the risk of sending the voucher without a guarantee that the payment would follow. Underpinning this trust was the realization that at some point another recharge would be required through the same practice and as such long-term relationships were important.

In February 2021, following a disagreement with the landlord, MV and his family moved out from the RDP house that they were sharing with BT to another RDP house which they rented. Almost similar to BT's house, the new house was also a two bedroomed RDP house. On its front was a zinc made structure which accommodated a couple and their one-year toddler. At the new house, MV's family and the family in the external structure were consuming 14 units of electricity per day which would roughly cost R20. This would bring the monthly cost of electricity to R600. This was expensive for MV

considering his precarious employment and the burden of solely shielding the R2800 rent in the new RDP house. Aware of the cheaper black-market electricity vouchers that they used to recharge with at BT's house, MV agreed with the family in the external structure that they would recharge with cheaper black-market vouchers to cut electricity cost.

However, MV realized that he had lost the contact of the person who used to sell the electricity at BT's house. He was then given another contact by a woman from his church. Similar to the procedure at BT's house, MV contacted the person and placed an order. It took almost a week before MV could get a response and during this week MV recharged with Eskom electricity. This cost the household R20 to buy the 14 electricity units that they consumed a day. Sometimes the electricity would go off before they recharged and MV had to negotiate with the family in the frontyard house so that they contributed towards electricity while waiting for the cheaper voucher. After a week, the contact then delivered the electricity voucher and MV recharged successfully. The 600 units voucher cost R300 which MV send in person as cash to the church lady who had shared the contact with him. From that lady, the payment would then move along the supply chain until it reached the person selling the back market vouchers.

Recharging with cheap black-market vouchers was not a practice for RDP house dwellers only, resident-made house dwellers also engaged in this practice as long as they had an Eskom prepaid meter. Interviewee PM, a single mother living in an Eskom electrified resident-made also engaged the same practice. PM was a single mother, unemployed and living off a small income which she got from selling vegetables on the road in front of the zinc made house which she was renting for R700. PM's house did not have its own Eskom box, she shared an Eskom box with two other households, one of which was her sister's. Her sister's family also lived off a small income which she obtained from selling fruits, vegetables, and meat at the community market. The business required constant access to electricity as she needed to microwave roasted chicken feet before sending them to the market. With such circumstances they could not afford electricity units running out and electricity being automatically disconnected. As a result, they resorted to buying cheap black-market vouchers, PM said,

We don't buy electricity from the shop. We have to buy from people with the cheap vouchers. We pay R400 and we buy the cheap vouchers, and these can last us for two months.<sup>16</sup>

To circumvent recharging through the Eskom prepaid meter and access electricity for free, residents also hired electricians to bypass the prepaid meter for a fee. For interviewee MN, her first encounter with Eskom prepaid meter bypassing/bridging was at her workplace in Milnerton where her rich boss hired an electrician to bypass his prepaid meter and the reading remained stuck at 16.5 electricity units for 6 years. Interviewee PM testified of how when she was living in the old houses (Witsand Phase 1), her landlord had hired an electrician to bridge the electricity meter. After the Eskom meter had been bypassed, they never recharged the Eskom prepaid meter again. Interviewee MK, an electrician in Witsand, explaining the technicality of bypassing the meter said,

Yes, people do bridge electricity. There would be two wirers that would be getting into the Eskom box. The live wire would be going through the meter. Before the meter you put a wire and connect direct to your house. The electricity won't be passing through the meter it would now be passing through the wire that you would have put in. This is called bypassing; you can just put a single wire. This is very easy for the people in Eskom to catch the people who would be doing this, but the problem is that you will catch everyone.<sup>17</sup>

For interviewee MV, the motivation for tampering with the prepaid electricity meter was to reduce the tripping that they were experiencing at their house as they lived at that plot with two backyard houses and four families. They needed to find a way to ensure that they could switch on all the stoves simultaneously for the households without the electricity tripping. They found an electrician who could do this work. According to MV, while the Eskom prepaid meter could be tampered with to both avoid paying as well as to increase electricity current to the house, there was a high risk of being discovered by Eskom. When MV once called Eskom to resolve an electricity fault in his street, MV explained how the Eskom worker first checked whether the prepaid meter had not

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<sup>16</sup> Personal Interview with PM, 4 January 2021

<sup>17</sup> Personal Interview with MK, 7 January 2021.

been bypassed and fortunately at that time it was not. If discovered to have bypassed, the repercussions ranged from fines to disconnections. Explaining how an electrician had demonstrated how the Eskom prepaid meter is bypassed, MV noted that,

He [electrician] puts his cable there [Eskom box] so that when electricity comes it bypasses the meter going directly onto the box. He [electrician] wanted to put those wires so that, he increases the volume of electricity coming to the house. He wanted to do this so that electricity can come with more power than what is regulated by Eskom. What stopped us was that the money that he wanted was too much and the landlord was not willing to pay the money.... He wanted to bypass the electricity so that before it got to the meter, it would have gotten to the circuit breaker. We would be having more power already...<sup>18</sup>

To minimize the cost of Eskom electricity, some residents circumvented recharging with Eskom vouchers by buying black market electricity vouchers and hiring electricians to bypass the Eskom prepaid meters. To do this they drew on a complex set of relationships to either contact the black-market electricity dealer or the community electrician.

#### **4.2 Adapting: Homemade subnetworks, rewiring and installing private meters**

To adapt electricity access to multi-household living, differential access to Eskom electricity and precarious livelihoods - in both RDP and resident-made houses- residents in Witsand extended electricity between houses through homemade subnetworks. Electricity was extended from a house with electricity to a house without electricity through an electricity wire. Interviewee BT and his family of four shared a two bedroomed RDP house with MV's family on a plot with both a backyard and frontyard zinc made houses. At BT's house, electricity was extended from the RDP house to the backyard houses. The image below shows how electricity was extended from the RDP house to external structures.

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<sup>18</sup> Personal Interview with MV, 30 July 2020.



*Figure 7: Electricity Extension between RDP and backyard house.*

*Electricity wire connected inside Eskom box in RDP house (left), the wire is extended outside to a backyard house (center), wire connects to makeshift adapter inside the backyard house from which dweller connects electricity adapter (right) (Source: Author, January 2021).*

As shown in the image above on the extreme left, an adapter was plugged directly to the Eskom box inside the RDP house. Electricity cables were then plugged on the adapter and extended out over the sink and through the window to connect the two houses outside. The image on the extreme right shows how in the external structures, the wire was connected to another adapter where occupants of the external houses connected their appliances from. To pay for the electricity, both RDP and backyard house occupants convened every month and made an equal contribution of R200.

Before BT's household connected the external structures through the adapter, they initially connected the external houses directly inside the Eskom box situated in the RDP house. RDP house dwellers had a disagreement with the backyard house dwellers over electricity payments which led BT and MV to disconnect the backyard dwellers to pressure the backyard dwellers to pay for the electricity. After the RDP house dwellers attempted disconnecting the backyard houses by cutting the connecting wire with a knife, there was an explosion and an electricity blackout for the entire house.

The RDP house occupants decided to reconnect the backyard dwellers on an adapter which would make it easy to unplug and disconnect when the backyarders refused to

pay. BT and MV's households contributed money to buy the adapter from the local hardware. After that, they simultaneously switched on their stoves and jugs so that the electricity could trip three times and disconnect for an hour. The electricity tripped and disconnected. While the electricity was switched off, MV connected the adapter and then reconnected the backyard and front yard houses on the new adapter. MV had seen this form of connection where he had previously worked.

The way residents extended electricity from the Eskom box of an RDP house to a backyard structure was similar to how they extended electricity to free standing resident-made houses. Residents plugged in an electricity extension cable in the Eskom box of the RDP house and then extended it to the resident-made houses. In the resident-made houses, the cable would be connected to an electricity adapter from which a single or multiple houses were connected. This connection was usually made by a community electrician. In most cases the resident-made house dwellers paid a fee for the connection as well as contributed to recharging the electricity in the Eskom electrified RDP house.

Interviewee ES told a story of an RDP house dweller who had extended an electricity wire from his Eskom box to a non-Eskom electrified resident-made house with both households contributing equally towards recharging the electricity. The RDP house dweller had an altercation with the resident-made house dweller over the rate at which electricity was depleting. He went to check the house he was providing electricity and realized that the person was also connecting seven more resident-made houses for a fee which caused the electricity to deplete quickly. He ended up disconnecting that household. Apart from the materiality of electricity wires, house to house electricity extensions were sustained by trust.

Moreover, there were some residents who extended electricity between two different RDP houses. Interviewee MO was renting an RDP house with her husband and two children. Outside the RDP house was a two roomed backyard zinc house. Following disagreements with the backyard dwellers over electricity payments, she decided to ignore the Eskom meter situated in her house. With the house next door vacant, she liaised with the owner of that house to connect an extension cable from the Eskom box of that house. After the neighbor agreed, she extended the cable to an adapter inside her house. From the adapter, she connected her appliances. MO recharged on the Eskom prepaid

meter next door while the backyard dwellers recharged on the Eskom prepaid inside her house.

The practice of adapting electricity infrastructure to multi-household living by extending electricity from one house to another was not exclusive to RDP houses. Residents in Eskom electrified resident-made houses also engaged in the same practice. Some residents of electrified resident-made houses extended electricity from Eskom boxes inside their houses to multiple rooms and other houses lacking electricity access. Such was the case at the house that interviewee BB who was renting a room in an Eskom electrified resident-made house. BB narrated how his landlord had built the structure and lived there with his family. After living there for a while, the house was electrified by Eskom.

After getting his resident-made house Eskom electrified, he later received his long-awaited RDP house. Moving to his new house, BB's landlord rented out part of his house, with the other section used by his brother. With the Eskom meter situated in what was initially the landlord's section of the house, BB explained how he and other tenants secured an adapter which they plugged in the main Eskom box. From the adapter, each of the four households using the plot connected and extended electricity to their rooms. BB agreed with other tenants that each household would contribute R200 for electricity every month which would bring the monthly contribution for electricity to R800. They usually recharged the meter once a month except in some circumstances where the electricity would run out before the month ended forcing tenants to reconvene and make additional contributions. The image below shows electricity extended from one house to another in an Eskom electrified resident-made house.



*Figure 8: Electricity Extension between multiple rooms in Eskom electrified resident made houses.*

*The image on the left shows the room with the electricity adapter connected to the Eskom box, the one on the right shows a wire extending from an adapter from the room with the Eskom box to interview BB's room (Source: Author, January 2021).*

Albeit Witsand is characterized by a complex housing landscape, these houses and their residents were connected through house-to-house electricity extensions. Seeking to adapt Eskom electricity provision to the lived realities of multi-household living and differential access to Eskom electricity, residents extended electricity from one house to another. Underpinning these practices were complex sociotechnical assemblages.

Moreover, residents in Witsand adapted Eskom electricity infrastructure to multi-household living arrangements by installing private prepaid meters to allow each household to recharge on their own and prevent possible conflicts over electricity payments. Residents' experiences in Witsand show that one of the biggest challenges associated with multi-household living is recurrent conflict over electricity payments. Conflicts emanated from the difficulty in reflecting differential use and consumption in the contributions that households made towards electricity.

As a result, some household members declined making electricity payments. These usually claimed to have smaller families, lesser electrical appliances or not having used the

electricity due to their demanding work commitments. In some cases, this was only resolved by the landlord ensuring that each house had their own separate private prepaid meters. This was particularly common in RDP houses with backyarders and high-rise flats which accommodated multiple families.

To have the separate electricity private meters, landlords hired electricians to complete such installations. Interviewee PK, a single male renting a room extended from the RDP house narrated the experience of how his landlord had secured private prepaid meters for each household at that plot. PK was renting one of two rooms extended from the RDP house. The other room was used by another couple and the main house accommodated the landlord, an elderly man who lived with his wife. At his previous house, PK had his own private meter in his room. He had vacated that house because of the exorbitant electricity costs at that house. He suspected that his landlord had been fined by Eskom for illegal electricity access practices and the tenants were servicing the landlord's fine whenever they recharged which made the electricity expensive.

To install the private prepaid meters, PK's landlord hired GR an electrician in Witsand to complete the installation for a fee of R600. Describing GR, PK identified him as a street electrician who was not necessarily professionally trained as an electrician. Interviewee GR had previously worked as an electrician at a private company contracted by Eskom to install prepaid meters in RDP houses in Mpumalanga. In an interview with GR, he noted that apart from his experience in Mpumalanga, some of his knowledge in installing the private prepaid meters he observed and researched on the internet.

Before coming to PK's house, GR bought two Citiq prepaid electricity meters<sup>19</sup>, breakers and cables from the hardware. Each Citiq prepaid meter cost between R350 and R500. After securing the materials and bringing them to PK's residence, GR first disconnected the existing Eskom connection. After that he extended electricity from the main Eskom meter to the new Citiq meter through an electricity wire. He then fitted each of the two rooms extended from the RDP house with a prepaid meter.

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<sup>19</sup> A private prepaid meter installed separately in each household's room or house usually to prevent conflicts over electricity recharging in multihousehold living arrangements.

After installing the Citiq prepaid meters in each of the two rooms, next was registering the private prepaid meters with Citiq- the company which sells the private electricity prepaid meters. To do this, he requested the landlord's name, house number, phone number and bank details which the landlord provided. Through his phone, GR send the details to Citiq and the private prepaid meters were registered and each household could recharge on their own private prepaid meters. The image below shows a fully installed Citiq electricity prepaid meter.



*Figure 9: Fully installed Citiq electricity prepaid meter.*

*PK's landlord hired GR an electrician to install the private prepaid meter to decentralize electricity recharging to each household in a multi-household living arrangement (Source: Author, January 2021).*

With the Citiq meters, each household had its own electricity breaker and prepaid meter. However, electricity only tripped on the Eskom breaker as the Citiq breakers were only meant to isolate power to rooms and did not have a mechanism to trip. One of the major downsides to using the Citiq prepaid meters is that it was impossible to recharge the cheaper black-market vouchers through the Citiq prepaid meters as these vouchers could only work on Eskom prepaid meters. This was a major drawback because recharging with cheaper black-market vouchers was a pervasive cost cutting measure in Witsand.

Moreover, Citiq prepaid meters were more expensive than the Eskom electricity meters. GR explaining why this was so noted that Citiq acted as a middleman between residents and Eskom and took a fraction of the payments that residents made through these meters making the electricity more expensive. Interviewee MW, a mother of four, sharing an RDP house with another family in a yard with a zinc made house in front once rented a house with the private electricity prepaid meters. She noted that R100 on their current Eskom meter bought 70 electricity units while on the private prepaid meter R100 could only purchase less than 50 units.

Interviewee MM, a resident in Witsand living with his wife in an RDP house moved out from the house he was renting because his landlord had installed a Citiq prepaid meter in his house making the electricity too expensive. MM's landlord had built a new flat in front of the RDP house that MM was renting. Upon completion the landlord transferred the Eskom meter from the RDP house to the new flat leaving him with a new Citiq electricity prepaid meter. With the new Citiq meter, he could only buy 30 units of electricity with R100 in contrast to the over 70 that they used to buy on the Eskom meter. After informing the landlord of the increased expense of the new electricity prepaid meter, the landlord promised to resolve the problem. He later asked him to recharge and see if he would get more electricity units after the landlord's intervention. He tried to recharge again with R100 and that time he received 47 units. While this was an improvement this was still expensive for MM. He informed the landlord that electricity was still expensive for him. The landlord resorted to slashing R300 from his R2500 rent so that he could cushion himself against the high electricity cost. Despite this offer, MM moved from that house because it was too expensive for him.

Moreover, since the private prepaid meters were linked to the main Eskom meter, if the Eskom meter was not recharged, even if tenants with private electricity meters had electricity units, they could not access electricity until the main Eskom meter was recharged. If the landlord was away and his electricity units ran out while the Eskom meter was locked in the landlord's house, tenants could not access the electricity. Such was the experience of PK when his landlord did not have money to recharge the meter. Commenting on the challenge of relying on the landlord recharging, PK said,

That has been the case in the past few days where he [landlord] would be buying very small units for say R10 or R20 which would exhaust in a day or two, when they

run out, they also trip here, and we would not be able to use the electricity ourselves.<sup>20</sup>

Adapting also involved residents rewiring Eskom transmission lines to increase electricity current to their houses, usually to support electricity intensive home-based enterprises. GR noted that another practice that residents engaged to increase electricity current to their houses was replacing Eskom wires with thicker ones. Resident RS who was running a welding business at his house and required electricity currents higher than the 20 Amp provided for in RDP houses hired an electrician to perform this practice. Although he was successful, he had an encounter with Eskom which challenged his practice.

Residents in Witsand attune Eskom electricity to the lived realities of differential access to Eskom electricity and precarious livelihoods by extending electricity from one house to another, installing private prepaid meters and replacing Eskom wires with thicker ones. In doing this, residents attune Eskom electricity to their lived realities.

### **4.3 Appropriating: Residents Tapping Eskom Electricity**

Some residents in Witsand appropriated Eskom electricity. Residents' practices of electricity appropriation are epitomized by the diverse practices of residents- living in both RDP and resident-made houses- in electricity tapping. This includes diverse residents' practices usually externally visible wherein they piece together electricity wires and connect them to Eskom transmission lines or transformers thus extending electricity to their houses.

Electricity tapping is a practice that both residents of RDP and resident-made houses engaged in. Interviewee SK rented a new RDP house with his wife and son. He connected his wire directly to the closest Eskom pole to his house without going through the Eskom meter. This was because he had occupied the house before it had been completely installed with Eskom electricity. To provide electricity to his house, SK hired an electrician recommended by his landlord to connect his house to an Eskom pole for a

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<sup>20</sup> Personal Interview with PK, 4 December 2021.

fee of R100. Since SK already had an Eskom box inside, the electrician connected from the pole to the box and then to the rest of the house. With his house already tubed with electricity cables, it was easy to get the electricity to the rest of the rooms. When the wires burnt, he called the electrician to replace the wires for a fee of R50. The figure below shows the new RDP houses in SK's street tapping electricity directly from the Eskom pole.

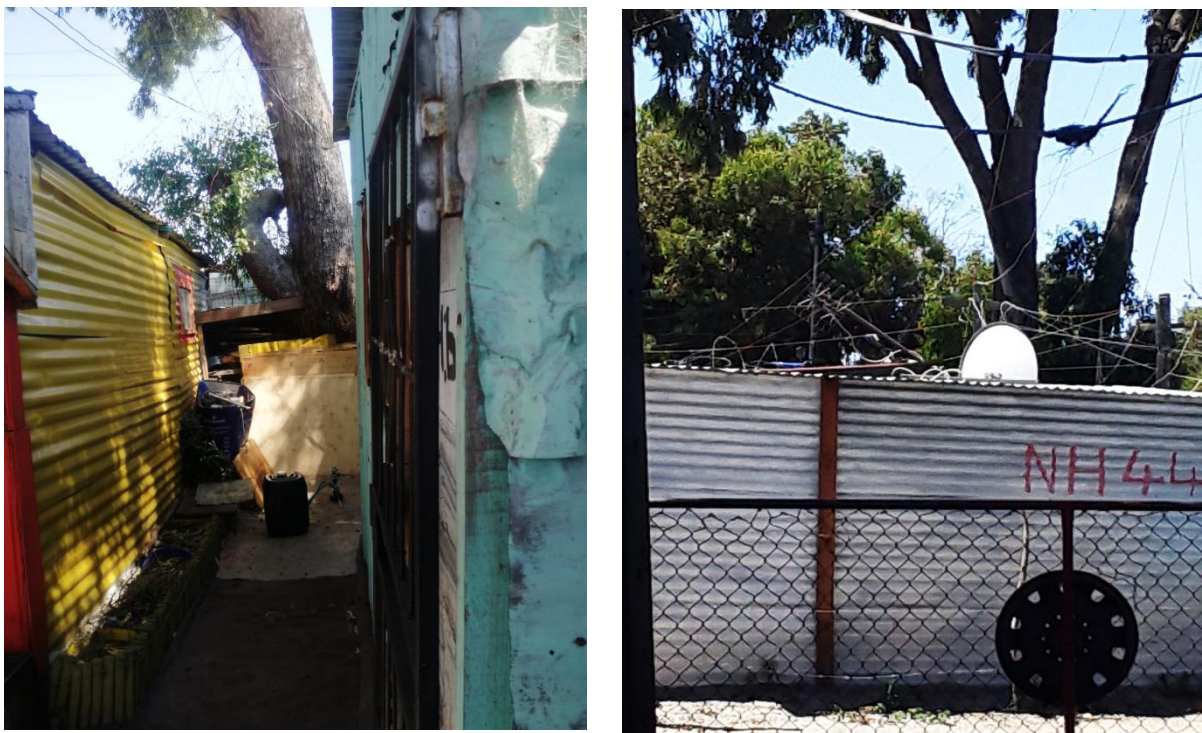


*Figure 10: Residents tapping electricity directly from Eskom pole in RDP houses.*

*The image shows wires extended from the Eskom pole to newer RDP houses waiting for Eskom electrification (Source: Author, January 2021).*

Resident-made house dwellers also tapped electricity directly from Eskom poles. Interviewee CN, who had lived in a residents-made housing area in 2017 narrated how they would secure electricity wires from the local hardware and connect directly from the Eskom poles to their houses. During that time, CN shared a room with his friend in a six

roomed zinc made house. In another room there were two individuals who were also living together while all the remaining rooms were used by single individuals. When CN first arrived at this new house, he brought with him an electricity wire which he had bought from a local hardware. Next was finding an electrician to make the connection for him. To make the electricity connection, the electrician charged a price equivalent to the cost two beers (R40). CN remembered paying again almost on a weekly basis when the wires burned. Sometimes there were cases where the wires which would be supplying the whole street would burn. For example, if there were eight families without electricity, the electrician would charge between R20 to R40 per family. The electrician would come and inspect and see the number of resident-made houses that would be lacking electricity. Even if one of the dwellers of the affected houses was not there, their neighbors paid for them and when they returned, they would be reimbursed. The image below shows electricity wires connected to an Eskom pole, coming through a tree and then connected to the resident-made houses.



*Figure 11: Electricity tapping in resident-made houses.*

*Both images show wires extended from Eskom transmission lines to non-Eskom electrified resident-made houses (Source: Author, January 2021).*

Also living in a resident-made house and accessing electricity by connecting directly to the Eskom wires was interviewee DK. He was a single male living in an area close to the taxi rank which was yet to undergo Eskom electrification. To access electricity, DK bought electricity wires from the hardware. Sometimes he would gather pieces together and join to make them longer as could be seen through the different colors composing the wires bringing electricity to his house. After securing the cables, DK hired a local electrician to make the connection for a fee. Electricians usually brought with them a ladder that they would hoist against the electricity pole. With DK stabilizing the ladder, the electrician attached electricity wires to the Eskom transmission line. These would be extended back to the house and connected to an electricity adapter from which all other appliances are connected.



*Figure 12: Residents connecting directly from Eskom transformers.*

*The image shows wires connected to Eskom transformers by residents living in non-electrified houses and extending electricity to these households (Source: Author, January 2021).*

The figure above shows the materiality of resident-made electricity connections on Eskom poles and transformers in interviewee DK's street. While the images depict the electricity wires in resident-made electricity connections as dangling randomly and all over the place, it is noteworthy that experiences in Witsand show that residents did not

always randomly select Eskom poles and transformers to connect from. To prevent each other from connecting on the same pole and weakening the electricity access, DK noted that residents agreed not to connect on the same pole. Residents of certain houses would connect on some poles while others would connect on other ones. Social relations were integral in determining how residents organized themselves in the houses as well as how they made electricity connections. Resident encounters often emerged when one resident connected on another groups' pole or transformer. Interviewee DK explained that,

Most people do not pull [electricity] it on the same place or same pole because they know it's going to be slow.... People nowadays are saying that we must connect on different poles to avoid the problem of electricity slowing.<sup>21</sup>

Moreover, commenting on the cooperation between electricians and persons whose houses were connected, SY a former resident-made house dweller said, 'Even if it's raining or not, we must go there day or night we must go there and assist the guy that is fixing.' This shows how electricity tapping in Witsand was not only a material practice but was also involved social connections and community solidarity.

By drawing on social networks and tinkering with Eskom infrastructure, ordinary people -who might otherwise be excluded from adequate electricity access- took charge of their own inclusion. This allowed them to endure the delays and disruptions in Eskom electricity provision. They stepped out of Eskom's expectations of 'appropriate electricity consumption' and accessed electricity at their own terms.

In conclusion, to access electricity in Witsand, some residents exploited complex material, social and institutional infrastructures by circumventing Eskom's mediating technologies. Others adapted Eskom electricity to the lived realities of differential electricity access, multi-household living and precarious livelihoods by extending electricity from one house to another, tampering with Eskom prepaid meters and replacing Eskom wires with thicker ones. Moreover, there were some residents who dictated their forms of access by appropriating Eskom electricity through diverse practices of electricity tapping which include residents piecing together wires and connecting them to Eskom

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<sup>21</sup> Personal Interview with DK, 5 January 2021.

transmission lines and extending electricity to their houses. These practices are not mutually exclusive but rather encompass a wide range of tactics that residents in Witsand engage in to make electricity work for them. However, while ordinary people in Witsand exercised their agency by improvising electricity access, resident-made electricity connections in Witsand bore bodily, relational, and legal risks.

## Chapter 5: Improvised Electricity Access and its Precarious Achievements

### Introduction

From electrocutions and house-fires to resident encounters and Eskom disconnections, improvised electricity access in Witsand embodied contradictory resident experiences. Although most residents recognized the responsiveness of improvised electricity access to their lived realities, they were also weary of the bodily risks associated with their practices. While residents exercised their agency by improvising electricity access, resident-made electricity connections in Witsand were precarious achievements. Apart from the daily labor required to sustain these forms of electricity access and the visceral bodily risks associated with these practices, resident-made electricity connections were also contested within and between households as well as with Eskom and the City of Cape Town. This chapter navigates the tension between the possibilities emanating from residents exercising their agency by improvising electricity access and the costs of enduring the precariousness of their practices.

### 5.1 When Connections Fail: Bodily Experiences

On the 5<sup>th</sup> of March 2020, Councillor Joseph Witbooi signed a motion for the City of Cape Town to implement an educational program in Witsand - and other neighboring areas in Sub council 1 - aimed at raising awareness on the dangers of resident-made electricity connections. This was on the backdrop of an incident on the 21<sup>st</sup> of January 2020 in Witsand, where a man was electrocuted to death while attempting to tap electricity from an Eskom pole. Interviewee BO, a resident in Witsand shared his experience of seeing a man electrocuted to death while attempting to connect wires on an Eskom line and extend electricity to his house, he said,

This [tapping of electricity from Eskom poles] causes accidents because last week I saw someone who was electrocuted who fell in the middle of the *mkhukhu* [shacks] and he died. I don't know how he wanted to connect but when he fell, he went in-between two shacks while the shacks had already been electrified. He died while I was

looking. The person was from here, but I did not know him personally. He was trying to connect electricity for himself so that he could at least cook for himself.<sup>22</sup>

In a similar case, TK, a single mother who had migrated from the Eastern Cape in 2017 and dwelling in an Eskom electrified resident-made house left to her by her brother expressed her fears of residents-made electricity connections following the electrocution of her neighbor. The previous month, her neighbor who was living in a non-Eskom electrified resident-made house had attempted to connect his house directly from a nearby Eskom transmission line. While on his ladder still making the connection, he was electrocuted and died on the spot. Sharing another recent case of a resident-made electricity connection related accident, TK said,

The illegal connections are very dangerous because other people die...There was another guy that side, but I am not sure about the story. I just saw on WhatsApp that there was a guy who was burnt by electricity, he was very bad. He was taken to the hospital and luckily, he didn't lose his life.<sup>23</sup>

In a story that sits infamously in the minds of most residents in Witsand, epitomizing the material and bodily risks associated with resident-made electricity connections. A couple together with their three young children were burned to death in their zinc made house in an allegedly electricity access related fire on the 14th of June 2020 in an area close to the Open-Heart community hall. Interviewee EC, a resident commenting on this story noted that when the fire started, cries were heard from inside the zinc made house, but the fire spread too quickly, and it was impossible for neighbors to rescue the family. Nothing could be salvaged from the house except the remains of the family members excavated from the debris in the aftermath of the fire.

The only survivor in the family was a 15-year-old daughter of the deceased couple who had slept at her cousin's house. Commenting on her traumatic experience, the girl said, "I feel like I am dreaming. I don't believe it. I just feel like killing myself" (Luhanga, 2020:5). As the case is with most house-fires house-fires in Witsand, the exact cause of the fire remains a subject of speculation. Some residents alleged that the fire was caused

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<sup>22</sup> Personal Interview with BO, 4 January 2021.

<sup>23</sup> Personal Interview with TK, January 2021.

by a stove which burst while Ward 32 councilor Barbara Rass presumed that the fire could have been caused by a candle noting that the house had not yet officially been electrified by Eskom.

Furthermore, Interviewee MK an electrician in Witsand tells the story of a young girl who was electrocuted to death when she had put her wet clothes on an electricity wire, mistaking it for a washing line. After that experience MK said he was no longer comfortable making electricity connections for residents in Witsand. He noted that if approached by a prospective client he referred the client to other electricians because these connections were too dangerous, and he did not want to make the connections himself. MK commented that if there were accidents related to electricity connections, the electrician usually took the blame.

Interviewee ES, a resident in Witsand also shared another incident where electricity wires were left exposed after one resident had connected his house to an Eskom line. A little girl stepped on the wires, and she was electrocuted to death. KT's wife also shared her dislike for resident-made electricity connections because these practices had claimed the life of a child she cared about. She said,

The fact that people illegally connect I don't like it, especially when it affects children. I know of a child who was so close. The child touched the illegal electricity connection and was electrocuted there and there and died. When something like that happens where it ends up affecting some people who are innocent it is painful.<sup>24</sup>

Living as a single mother in with her two children, Interviewee MD expressed how she was afraid of the risks that resident-made electricity connections could pose. After tapping electricity for a while before her zinc made house was finally Eskom electrified, she witnessed the dangers of this mode of electricity access. She said,

The other problem is that [resident-made] electricity is dangerous. In 2014 I was a new citizen here in Witsand. We were using *izinyokanyoka* [direct connections to

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<sup>24</sup> Personal Interview with KT's wife, 5 January 2021.

Eskom poles], that type of electricity has killed a lot of people. Even now I don't trust electricity anymore<sup>25</sup>.

The precarious embodied experiences of resident-made electricity connections were not limited to resident-made house dwellers. Even in RDP houses, residents sometimes experienced the vagaries of resident-made electricity connections. Interviewee ST, an RDP house dweller in Witsand once had a near death experience while attempting to disconnect electricity from the house of backyard dwellers who had not contributed towards electricity payments for two months. Following successive confrontations over electricity payments contributions proving fruitless, she took a metal knife and tried to cut the electricity wire that was connecting the backyard house to the Eskom box inside the RDP house. Upon successive strikes on the wire, she heard a huge burst accompanied by flames almost in her face and she fell backwards, with the knife broken in half and thrown to the side. For a moment she did not know what was happening but when she got up and recollected, the electricity had tripped for the whole house. Narrating her fears, she said,

It felt like my breast was going to come out of me. It was scary because a big flashlight came out of that thing [Eskom electricity box]. The good thing is that the electricity burst on the knife, so the knife just broke and I fell.<sup>26</sup>

In another case that happened on 14 March 2021 in a house across the road opposite the house I lived in during my ethnographic work, another RDP house burned down, allegedly because of a malfunctioning electricity extension. At this house electricity was being extended from the RDP house to the backyard structure through an electricity wire. The RDP house dweller, who was a tenant explaining the ordeal narrated how the wire that was connected to the Eskom box inside the RDP house and extended out through the window to the backyard house heated and caught fire. It then torched the curtain and the fire spread to the entire house and destroyed everything in the house. He complained that he had informed the backyard house dweller a couple of days be-

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<sup>25</sup> Personal Interview with MD, 7 January 2021.

<sup>26</sup> Personal Interview with ST, 13 January 2021.

fore that the wire was heating but he had ignored it. The RDP house dweller was a mechanic, with massive equipment and it was all lost in the fire and this was a traumatic experience for him. The image below shows the RDP house burnt down during the fire.



*Figure 13: RDP house gutted down in resident-made electricity connections related fire. The image on the left shows Eskom personnel who were called to avert the electricity fault, to the right is the RDP house burnt down in the fire (Source: Author, March 2021).*

The image on the left shows an Eskom vehicle with personnel who had come to resolve the electricity fault that had caused the fire while the one on the right shows the house gutted down by the fire. Residents making electricity connections in Witsand contend with diverse precarious bodily experiences. These embodied experiences include pain, trauma and death. Despite experiencing the precarity of their practices, residents persist in fear. DK, commenting on how both residents and electricians contend with the fears of making electricity connections said,

There was someone [community electricians] who was doing this [connecting directly to the Eskom pole] and even now there is someone who is always asking us

for money. We do not do it ourselves because we are afraid of getting shocked. Even him it's not like he is not afraid, he tells us that he also afraid.<sup>27</sup>

## 5.2 Conflicting Rationalities: Disconnecting and Reconnecting

Both the City of Cape Town and Eskom framed resident-made electricity connections as illegal, inappropriate, and dangerous. The City of Cape Town's Fire and Rescue spokesman, Theo Layne, said '... the dangling wires were present in almost all informal settlements, posing a risk not only for residents, but also for firemen' (Kinnear, 2011:3). Following an electricity connections related fire in Witsand in 2011, Eskom's Western Cape spokeswoman, Jolene Henn, said that despite having invested millions of rands in campaigns to raise awareness about electricity and safety, the practice of "electricity tapping" still occurred. "Communities are fully aware of the dangers in distributing electricity in the manner they do, but still continue with these unsafe acts. Eskom regularly removes illegal connections, but the perpetrators reconnect as soon as staff leave the area. "Henn said Eskom would continue treating illegal connections as a "serious social issue" and engage communities to curb the dangerous practice (ibid).

Eskom responded to electricity tapping by disconnecting resident-made electricity connections. However, residents in Witsand usually reconnected their electricity as soon as the Eskom workers left. As a result, resident-made electricity connections were always in the making, sustained by persistent resident labor. Commenting on the practice of reconnecting, DK a resident-made house dweller tapping electricity from Eskom poles said,

We know when Eskom would come and fix the transformer, it is going to cut our cables, we don't worry. When Eskom is gone, we go back and put our things [electricity wires] up there.<sup>28</sup>

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<sup>27</sup> Personal Interview with DK, 5 January 2021.

<sup>28</sup> Personal Interview with DK, 5 January 2021.

Interviewee BM tells the story of a woman in Witsand who called the police on his neighbors as soon as she saw them making electricity connections. The police would immediately come, cut the wires and dismantle the ladders. Immediately after the police left, those residents attempted to reconnect their wires again. The woman called the police again and they would come and remove the reconnections. This happened three times in the space of an hour and the residents who were attempting to make these connections realized that there was someone close to them who was calling the police on them. Realizing the danger that she could be exposed to if her neighbors realized that it was her, she was afraid and decided not to call the police anymore.

With Eskom's disconnections proving futile because of residents' persistence in reconnecting. In October 2020, there were stories in Witsand where residents claimed that Eskom was replacing transformers in a resident-made housing area with new ones which if anyone attempted to tap electricity from the Eskom lines, electricity would trip for all houses in the area. Moreover, Eskom sometimes delayed resolving electricity faults as a measure to discipline residents over electricity reconnections and pressure them to police each other over resident-made electricity connections as the power outages would be affecting all residents.

Towards the end of May 2020, there were recurrent electricity outages in MV's street in the RDP houses. With Eskom having resolved the fault three times, but power outages persisting. When residents contacted Eskom for the fourth time in the same week, MV said, 'they [Eskom] say you know your problem and that problem you can fix it on your own. People must not connect electricity illegally.'<sup>29</sup> This fermented an encounter between RDP and resident-made house dwellers on the 25<sup>th</sup> of May 2020 where RDP house dwellers alleged that the resident-made house dwellers were responsible for the outages in their houses by connecting electricity illegally and overloading the system.

Between 2017 and 2021, Eskom embarked on a plan to electrify informal houses in Witsand. The logic behind the plan was that residents in Witsand tapped electricity because they lacked access to the physical infrastructure for electricity access. However, despite most resident-made houses being Eskom electrified in Witsand by the end of 2020, resident-made electricity connections persisted. Similarly, the City of Cape Town

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<sup>29</sup> Personal Interview with MV, 30 July 2020

also saw resident-made electricity connections as primarily emanating from informal houses. Echoing this, Mayco<sup>30</sup> member for area north, Suzette Little, said the City of Cape Town had given Eskom the go-ahead to provide electricity to the informal settlement because of the hazards and the conflict with formal residents, as well as the damage to Eskom's infrastructure from illegal connections (Luhanga, 2020).

Apart from Eskom mediating the externally visible practice of electricity tapping, interviewee MK an electrician in Witsand noted that Eskom also policed internalized practices such as recharging with cheap black-market electricity vouchers. To do this, Eskom examined the recharging patterns of each household on their databases and if there were anomalies on these patterns ranging from households using electricity but not recharging at all to recharging with very small electricity units that do not match electricity use. Eskom would then select these houses for physical inspection.

Interviewee ES, who was recharging with cheaper black-market vouchers told the story of when he had an electricity fault at his house. After calling Eskom and informing them of his challenge, he was notified that his Eskom meter had been queried and it showed that it had high electricity units even though it had not been recharged over three months. He was informed that his prepaid meter had a problem which required physical inspection. Realizing the risks that would arise if Eskom came and inspected his prepaid meter physically, he told the Eskom person that he had been on holiday for three months. He added that he did not think there was a problem with the Eskom meter, and he was going to buy some electricity units to see if the electricity fault would be resolved.

If adjudged by Eskom to be engaging in unscrupulous electricity access practices households were either disconnected or slapped with heavy fines. At a house that interviewee PK once rented, the landlord was convicted of having recharged with black market electricity vouchers. After being required to pay a heavy fine, the landlord negotiated with Eskom to allow for the fine to be serviced gradually through deductions from their electricity units whenever they recharged. However, this made the electricity units very expensive at that house. Commenting on this, PK said

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<sup>30</sup> The members of the Mayco (Mayoral Committee) are appointed by the Executive Mayor from among the members of the council. The role of the Mayoral Committee is to assist the Executive Mayor.

The owner of the house had an outstanding electricity bill and when you would recharge, a certain amount would finance the outstanding bill. If you would compare the units that we would get after recharging with, say R10 and what would other people with private prepaid meters would get, you would realize that you would get less than 4 units compared with the 5 or 6 that others were getting. It was too expensive, even today. Someone can come and live [rent] for a month and then they leave the following month because of this electricity issue.<sup>31</sup>

Striving to stay off Eskom's gaze, some residents in Witsand engaged in diverse practices. One of such practices that MV engaged in to mask his household's practice of buying cheap black-market electricity vouchers was creating a trail that made it seem as if they were recharging with Eskom vouchers. To do this, he did not recharge with black market vouchers consecutively without recharging with genuine Eskom electricity units in-between. After completely exhausting the black-market electricity units, at the start of every month MV made sure that he bought at least 14 units of genuine Eskom electricity for R20. In doing this, he thought he made sure that when Eskom checked his recharging patterns at least they would find a trail that would take his household off their gaze.

However, interviewee MN who also recharged with cheaper black market electricity vouchers did not feel as if there was anything that she could do mask her practice. She felt that if Eskom wanted to clamp down on her practice they would have already. Commenting on this, she said,

I only have one question, why is it that Eskom does not catch people who are making these connections. We take three months here without having recharged [with genuine Eskom electricity]. Are you telling me that Eskom does not see it on the computer that there is nothing appearing here? Why is it that the Eskom people never come, they can spent about three years without ever coming?<sup>32</sup>

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<sup>31</sup> Personal Interview with PK, 4 December 2021.

<sup>32</sup> Personal Interview with MN, 31 January 2021.

### 5.3 Resident Encounters

Resident-made electricity connections in Witsand were a site for multiple resident encounters at different scales and temporalities. In multi-household living arrangements, the major source of conflict was around the difficulty of reflecting differential electricity use patterns among households in the contributions that they made towards electricity payments when households recharged through the same prepaid meter. As a result, some residents did not want to contribute towards electricity claiming that they did not use the electricity as much as other households. On one plot in Witsand, BT and MV's households rented a two bedroomed RDP house while ML and RS' households rented the backyard and frontyard houses respectively. With the electricity extended from the RDP house to the two external houses, the four families recharged on the same Eskom meter situated in the RDP house.

With this living arrangement, household conflicts over making electricity payments were frequent. Each of the four households contributed R150 towards electricity every month. However, the R600 electricity did not take them through the month, it usually exhausted ten days before the month ended. This required each household to make another R50 additional contribution towards electricity. It was through the process of making this additional payment that conflict usually arose.

Resident XS was rarely at home as he worked for the entire day only to return in the evening and sometimes in the morning. Not using the electricity that much, the RDP house dwellers exempted him from making the R50 electricity top up. However resident ML argued that she also deserved the same exemption since she also spent most of the time at work. Her argument was that she did not use electricity that much since she only cooked in the morning and in the evening. The RDP house dwellers protested this arguing that ML's cooking schedule was similar to cooking for the whole day because by virtue of cooking lunch for the children in the morning it was the same as them having cooked in the afternoon. Moreover, they argued that ML also lived with her brother who spent the entire day at home watching TV, boiling water to bath and cooking which also consumed electricity. Furthermore, although she went to work, she also left her fridge and washing machine connected to the electricity.

As a result, conflicts over electricity payments were heated every month at BT's house. With the electricity wire extending electricity from the RDP house to ML's backyard structure plugged inside the Eskom box situated in the RDP house, whenever ML refused to contribute towards electricity, the RDP house dwellers unplugged the connection. When ML's husband returned from work in the evening, he made the electricity contribution without ML knowing. As soon as the payment was made, the RDP house dwellers reconnected ML's house.

After informing the landlord of the recurrent conflict over electricity payments and suggesting securing private electricity prepaid meters so that each household would recharge on their own. The landlord suggested that the tenants would have to foot the cost of installing the private prepaid meters which was said to be about R3000. All the tenants rejected this option because they knew that at some point, they were going to leave that house and they were not going to be compensated for the private prepaid meters they would have installed.

Despite some residents securing private prepaid meters to decentralize electricity payments to each household and limit the conflict over electricity payments. Even in houses that had private prepaid meters where each household could recharge on their own, conflicts were also common. Interviewee MT, her husband and four children had previously rented a two roomed backyard house at a plot with an RDP house that accommodated the landlord. In her house she had a private electricity prepaid meter where she exclusively recharged on with R400 worth of electricity every month.

The private prepaid meter that MT and her household were using was linked to the Eskom prepaid meter in the RDP house such that if the landlord had not recharged the main Eskom meter in the RDP house, even if MT had electricity units on her meter, she could not use those electricity units until the main Eskom meter had electricity units. Confusion over how the private prepaid meters worked led to the landlord at that house accusing MT's household of using the landlord's electricity units. This encounter escalated to MT leaving the house. Commenting on this, MT said,

They thought that we were using the electricity that they would have recharged in the main house. So, I argued that we were not using the electricity from the main house, I told them that since they did not have electricity I was going to switch on

my stove and see if it would turn on but there was nothing. If the main [Eskom] meter gets to 0 units, even if we have electricity, we won't be having any electricity. They needed to have electricity for the people in the flat [backyard house] to also have electricity. It's not like we would be using their electricity, the extra charges would be going to Eskom not that we would be using it.<sup>33</sup>

Even in non-Eskom electrified resident-made houses, electricity access was continuously contested among resident-made house dwellers. Interviewee SY recalled how while still living in a non-Eskom electrified resident-made house and tapping electricity directly from Eskom lines, each household would pay R10 to the community electrician almost on a weekly basis so that burnt out wires could be replaced. In the non-Eskom electrified housing area there were agreements between residents as to which households would tap electricity from which Eskom lines or transformers to prevent residents from tapping from the same place, overloading the system, and weakening the electricity for all households. However, this was a source of contestation among resident-made house dwellers when some residents connected on spots designated for other houses. Explaining this, interviewee SY said,

There were a lot of conflicts because those guys who collect money maybe connecting for 5 or 6 houses and there was another guy who was connecting for his house. This guy who is connecting for us he can't connect from that other guy's house. Each and every one makes their own space for their own people.<sup>34</sup>

Furthermore, at the community scale, RDP house and resident-made house dwellers encounter each other over diverse forms of improvised electricity access. While residents in RDP houses blame resident-made house dwellers for connecting electricity illegally, overloading Eskom transformers and causing electricity outages in their houses. Resident-made house dwellers on the other hand find legitimacy for their forms of electricity access based on the massive scale at which these practices were being undertaken – not only by resident-made house dwellers but by RDP house dwellers too. Interviewee

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<sup>33</sup> Personal Interview with MT, 4 January 2021.

<sup>34</sup> Personal Interview with SY, 5 January 2021.

DK living in a non-Eskom electrified resident-made house and tapping electricity directly from Eskom lines said,

The people in RDP houses don't come to remove our things because as you can see, we stay here, and we are many. You just can't come here, and you say you are going to remove the wire.<sup>35</sup>

Moreover, resident-made house dwellers contest disconnection by RDP house dwellers by arguing that RDP house dwellers did not have the moral standing to reprimand them over illegal electricity connections since the RDP house dwellers were former resident-made house dwellers who previously accessed electricity in the same way. Commenting on this, interviewee DK living in a non-Eskom electrified resident-made house said,

They come and shout at us saying you people grilled the transformer there and now we don't have electricity. The only thing we tell them is that even you people who now stay in RDP houses. You started off by living in hokkies also and you were doing the same thing. You now just can't say just because you received the house and a box and now you are going to tell us that we must not connect.<sup>36</sup>

In addition, the resident-made house dwellers also saw themselves as future RDP house dwellers and this shaped the way they contested for electricity access. For many residents, tapping electricity was a practice that was implicit in waiting for their RDP house. The fact that improvising electricity access was something residents had to do while waiting for their RDP houses legitimized residents' forms of access. DK aptly summed it up by noting that,

Even us when we get the RDP houses, we are going to blame them [those who would be making resident-made connections]. When I get a box and I see someone who is connecting and then I say how can someone do something like this of which I am also coming from that.<sup>37</sup>

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<sup>35</sup> Personal Interview with DK, 5 January 2021.

<sup>36</sup> Personal Interview with DK, 5 January 2021.

<sup>37</sup> Personal Interview with DK, 5 January 2021.

In conclusion, improvised electricity in Witsand is precarious power. Apart from being sustained through constant labor, resident-made electricity connections subjected residents to bodily risks when they failed. Moreover, these practices were contested both within and between households as well as with Eskom and the City of Cape Town. Moreover, while most residents perceive resident-made electricity connections as precarious but expedient. Eskom and the City of Cape Town sees these practices as illegal, dangerous, inappropriate, and constituting a serious social concern. These divergent rationalities between Eskom and residents manifest through disconnections of resident-made electricity connections by Eskom. Eskom electricity disconnections in Witsand were usually followed by immediate resident reconnections - as resident-made electricity connections were sustained through persistent resident labor.

## Chapter 6: Residents' Improvised Electricity as 'Precarious Power'

### Introduction

Most residents in Witsand are neither mere consumers of electricity produced, transmitted, and regulated by Eskom nor passive victims in their struggles for electricity access. Instead, they are protagonists of development who are fully rounded human beings with subjectivity and agency, shaping not only their own lives but society itself (Ballard, 2015). Some circumvent Eskom prepaid meters and vouchers; others adapt Eskom infrastructure to their lived realities while some appropriate Eskom electricity for their own use.

Circumventing encompasses residents' practices in evading recharging with Eskom vouchers by either bypassing the Eskom prepaid meters or recharging with black market electricity vouchers. In adapting, residents tweak Eskom electricity to attune it to their lived realities. This includes residents extending electricity to backyard houses to accommodate multi-household living or rewiring Eskom transmission lines with thicker ones to increase electricity current and support electricity intensive homebased enterprises. Appropriating entails residents taking electricity from Eskom transmission lines for their own use through various forms of electricity tapping. By invoking these multiple strategies, residents in Witsand exercise their agency to take charge of their own electricity inclusion.

Yet resident-made electricity connections are 'precarious achievements' (Gupta, 2015; Baptista, 2018). From resident electrocutions and house-fires to Eskom penalties and disconnections, these practices bear bodily, material, legal and relational risks. While Baptista (2018) uses precariousness to describe the ways in which electricity infrastructures are always in the making, never stable, always falling apart and in a constant state of being remade. I expand the notion of precariousness to capture the bodily risks, financial costs and contestation that characterize these practices. Circumventing involves the labor of residents constantly making sure that they are off Eskom's radar, adapting entails the persistent inconvenience of enduring frequent electricity tripping and appropriating involves the bodily risks of electrocutions.

Finally, I examine residents' logics in persisting with self-made electricity connections despite knowing the precariousness of their practices. In this section, I explore the practical and symbolic value of electricity for ordinary people in Witsand. I demonstrate that resident-made electricity connections matter not only because of their functional and symbolic importance but because they were also a site through which residents exercise their agency.

Having explored the mix of agency and precariousness that are entangled in the everyday practices of ordinary people making electricity connections, I conclude by arguing that residents' improvised electricity in Witsand resembles some form of 'precarious power'. In taking charge of their own electricity inclusion, residents in Witsand exercise their agency to make, use and contest electricity access and yet in doing this they simultaneously endured the 'precariousness' of the daily work of improvising and remaking connections, bodily risks and contestations associated with their practices.

### **6.1 Circumventing, Adapting and Appropriating**

Drawing on the materiality and relationalities of resident-made electricity connections I use circumventing, adapting, and appropriating to classify residents' electricity infrastructural experiences. Circumventing encompasses residents' practices in evading Eskom's mediating technologies. Baptista (2018) describes mediating technologies as the technological devices utilities adopt to enhance their services which include Eskom prepaid meters and vouchers. To circumvent these mediating technologies and minimize the cost of electricity access, residents in Witsand recharge with black market vouchers and hire electricians to bypass Eskom prepaid meters.

Recharging with black-market electricity vouchers involves securing the contacts of black-market electricity dealers through complex social circuits. This is followed by contacting black-market electricity dealers to request for the cheaper vouchers. If the dealers approve the transaction, they proceed to send the cheap electricity voucher to the prospective client. After successfully recharging with the voucher, the resident makes the payment for the voucher either through a bank transfer or as cash to a representative of the dealer. The cost of these vouchers is usually significantly lower than that of recharging with Eskom vouchers.

To circumvent the Eskom prepaid meters and access electricity for free, some residents hire community electricians to bypass the electricity prepaid meters. To do this, the electricians tamper with the electricity wires such that they transmit electricity directly from the Eskom transmission lines to houses without going through Eskom prepaid meters. After completing the bypass, residents access electricity for free without recharging with Eskom vouchers.

In bypassing the Eskom meters and recharging with cheaper black-market vouchers, residents in Witsand exercise their agency to circumvent Eskom's mediating technologies. While prepayment technology in South Africa has been deployed in the context of 'cost recovery' and neoliberal reforms aimed at 'aiding' residents to calculate and economize their consumption (Von Schnitzler, 2016). By circumventing prepaid meters, residents resist Eskom's attempts to regulate their behavior. With prepaid meters designed to automatically disconnect electricity when residents fail to pay. Evading this technology allow residents to deny Eskom's power to disallow electricity access.

In circumventing, residents do not seek explosive encounters with Eskom but rather prefer staying off Eskom's radar, weary of the potential penalties for their practices. Residents' practices in circumventing constitute what Bayat (2010) calls "quite" acts of encroachment, where ordinary people silently buy black-market electricity vouchers and bypass Eskom meters to encroach on Eskom electricity. While residents' practices in circumventing Eskom's prepaid meters were not based on explosive political action, their collective effect was to shift control away from Eskom to residents.

Borrowing a classification from Charlton's (2015) work on RDP housing, I use adapting to flesh out the practices that residents engage in to make electricity infrastructure relevant to their lived realities. Such practices include extending electricity from one house to another to accommodate multifamily/multi-household living, installing private prepaid meters to decentralize electricity recharging to each household in multi-household living arrangements and rewiring Eskom transmission lines with thicker ones to increase electricity current to their houses and support electricity intensive homebased enterprises.

To extend electricity from one house to another and adapt Eskom electricity to multi-household living and differential electricity access between houses, some residents buy

wires from local shops, while others piece them together from wherever they can and then use the wires to extend electricity from one house to another. Most residents are able to make this extension on their own while others hire electricians to do it for a fee. With pervasive backyarding in Witsand, this practice is important in extending electricity from the RDP house to the backyard and frontyard houses. Differential electricity access among houses, where some houses are connected to the Eskom grid (resident-made and RDP) and others were not (resident-made and RDP), prompt house to house electricity extensions in Witsand to be pervasive.

Apart from house-to-house electricity extensions, some residents adapt to multi-household living by decentralizing electricity recharging to each household to reduce conflicts over making contributions towards electricity payments by installing private prepaid meters which epitomizes how residents improvise electricity infrastructures to mediate social arrangements, resonating with the framing of infrastructure as a sociotechnical process (Storey, 2021; Baptista, 2018). Installing private prepaid meters require residents to buy wires and prepaid meters from hardwares and hire electricians to make the installation for a fee.

Seeking to adapt Eskom electricity to electricity intensive homebased enterprises, some residents increase electricity current to their houses by replacing Eskom wires with thicker ones. To access the material inputs to rewire the Eskom transmission lines to increase electricity current to their houses some residents buy wires from local hardwares, others get them from relatives while others pick them up from wherever they can. After securing the wires they usually hire an electrician to perform the rewiring for a fee.

Based on the above practices, in adapting, residents draw on complex sociotechnical assemblages to tweak Eskom infrastructure to conform to their lived realities. This resembles Kemerink-Seyoum et al's., (2019) notion of sociotechnical tinkering which she describes as the material actions of users in attuning infrastructure services to their lived realities in small but useful ways that link individual pieces to wider systems. Framing resident-made electricity adaptations through Kemerink-Seyoum et al's., (2019) sociotechnical tinkering makes visible the ways in which electricity adaptations are rooted

in the everyday actions and labor of individuals but expanding the wider Eskom infrastructure system. The everyday labors that residents in Witsand engaged in to make electricity adaptations include looking for wires, piecing them together, buying private prepaid meters and hiring electricians to install them. It is through these everyday actions that residents practice their agency.

Drawing on Charlton's (2015) work on low-income housing, residents in Witsand are not only sustained by Eskom electricity infrastructure but they also sustain it by making it relevant to their lived realities through the adaptations they make. Corroborating this argument, Storey's (2021: 81) 'implicit' infrastructures '... names a set of linkages born from necessity and crafted by the community, but which appear through use and context to be built into wider systems as assumed, potential or nebulous extensions.' Electricity adaptations in Witsand are implicit in that they are necessary parts of the workings of the electricity infrastructure system, and yet are not sanctioned pieces of the systems themselves. By being implicit, these electricity adaptations blur the line between the 'formal' and the 'informal', 'legitimate' and 'illegitimate.'

In the final category of residents' electricity infrastructural experiences, I use appropriating to describe the ways in which residents who are usually unconnected to the Eskom grid piece together wires and connect their houses to Eskom transmission lines. From buying electricity wires in local hardwares and sticking them to Eskom transmission lines to stitching them together from multiple pieces from the dumpsite and connecting them to electricity transformers, appropriating involves residents continuously making material improvisation both in forging electricity connections as well as in sustaining them. To insulate their naked electricity wires, residents tightly wrap their connections with plastics which they find in diverse places. In making various forms of material improvisation, residents exercise their agency by making complex material assemblages of wires, ladders and plastic rigged together to provide electricity access for the ordinary.

Apart from its materiality, this practice is also relational. Residents draw on their relationships with family and friends to acquire material inputs for electricity connections. When they find the materials, they hire community electricians to fix the electricity connections for them for a fee. Although it is the electrician who usually climb the ladder

to attach the electricity wire to the Eskom transmission line, it is the residents who hold the ladder in place in solidarity. As such, electricity tapping in Witsand is made and maintained through a complex set of material and relational engagements.

Electricity appropriation resonates with Simone's (2006: 357) notion of piracy which he describes as '...the act of taking things out of their normal or legitimate frameworks of circulation and use'. The concept of piracy makes visible the ways in which residents in Witsand draw electricity from designated Eskom transmission lines and use it in their houses. Residents' practices of electricity appropriation are usually externally visible and legitimized through the extensive scale at which they are practiced. By appropriating, residents exercise their agency to endure the delays in Eskom electricity provision while reconnecting following Eskom's occasional disconnections signifies residents' power to resist Eskom's authority in disrupting electricity access for the ordinary.

Circumventing, adapting and appropriating encompasses the multiple ways through which residents in Witsand exercise their agency to take charge of their own electricity inclusion. People themselves employ concepts, practices, and expectations that incontrovertibly "work" in some sense' (Ballard, 2015). They dodged Eskom and its mediating technologies, attuned Eskom electricity to their lived realities and seized Eskom electricity for their own use. While circumventing and adapting were primarily aimed at resolving immediate need rather than defying Eskom/the state, appropriating resembled some form of active resistance, by tapping electricity they ignored Eskom's authority to deny electricity access. Resident's electricity infrastructural experiences show a complex set of relationalities that involves residents both avoiding and resisting Eskom, transcending the Eskom versus illegal connectors dichotomy.

## **6.2 The precariousness of Resident-made Connections**

While resident-made electricity connections are a site for agency, they are precarious achievements (Gupta, 2015; Baptista, 2018). From resident electrocutions and house-fires to Eskom penalties and disconnections, these practices bear bodily, material, legal and relational risks. They are always in the making and sustained through persistent material and relational repair. Using Baptista's (2018) and Storey's (2021) framing of precariousness as describing how infrastructures are unstable arrangements of heterogeneous elements that require constant re-assembly, I use precariousness in the first

instance to describe the constant work required in making resident-made electricity connections.

In circumventing Eskom's mediating technologies by buying cheaper black-market electricity vouchers and bypassing the Eskom prepaid meters, residents are constantly alert to Eskom's inspections and engage in evading its gaze. In some cases, they do not even report electricity faults in their houses to Eskom in the fear that Eskom would discover their practices in the process of seeking to resolve the fault.

In adapting and appropriating, residents endure the daily work of replacing burnt out wires. The wires that are used in these practices are too thin, constantly burning and requiring frequent mending. To constantly rework their connections, residents hire electricians to do the work for a fee. In constantly paying community electricians to maintain the electricity connections, residents constantly incur financial costs that are sometimes higher than what they would have incurred if they were recharging with Eskom vouchers.

Moreover, while circumventing Eskom vouchers by buying black market ones allow residents to access electricity relatively cheaply, the process is not always fluid, it takes time between requesting for a voucher and getting one. After a prospective client request for a voucher, the turnaround time for the black-market electricity dealer to provide the electricity voucher ranges between three days to a week. In the process of waiting, residents have to constantly check with the dealer if the voucher was ready. Sometimes after waiting for a week to receive the black-market electricity voucher, when it comes through it fails to recharge which usually extends the waiting period as the dealer arranges for another electricity voucher. In the meanwhile, residents endure recharging with expensive Eskom vouchers.

In adapting electricity to multi-household living by extending electricity from one house to another, residents have to endure pervasive electricity tripping which is common in these arrangements. This resonates with Bank's (2001) 'fractured urbanism' a notion which emphasizes the limits of the infrastructure relative to need, the competition for it, and the multiple social consequences involved. Residents in Witsand often have to use a roster to take turns to use the electricity. Moreover, while residents decentralize elec-

tricity recharging to each household in multi-household living arrangements by installing private prepaid meters, recharging on these prepaid meters is even more expensive than recharging on the Eskom meters.

Similarly, by appropriating Eskom electricity through electricity tapping, sometimes residents experience pervasive electricity tripping as the infrastructure would be overloaded. In some cases when residents draw from the same transmission line, the electricity coming to their houses would be so weak such that they are not able to use it for anything. In these circumstances residents negotiate and agree not to draw electricity from the same transmission lines to reduce overloading showing how these practices are mediated socially.

Resident-made electricity connections are also precarious in the sense that they bear a lot of bodily and material risks. This is particularly true for electricity appropriation and adaptation. The wires that are used in these practices are too thin and frequently burn, when this happens, they often torch houses resulting in material losses as well as visceral bodily experiences of pain, trauma and death. In appropriating electricity through the various forms of electricity tapping, residents constantly endure the risks of someone climbing up an Eskom transmission line and getting electrocuted and cases of this happening are frequent. Resident-made electricity connections in Witsand are precarious achievements, sustained through persistent work, endurance and visceral bodily experiences.

### **6.3 Connections Matter**

Residents' electricity infrastructural experiences show that they are aware of the precariousness of their practices. Their knowledge is based on experience, the experience of taking turns to cook and losing loved ones through house-fires or electrocutions associated with these practices. They are '...professors of their own suffering...' in the parlance of Selmeczi (2014:256). They exercise their agency not only by improvising electricity access but also by knowing the precariousness of their practices. Educating residents on the dangers of their practices signifies a negation of this agency hence these practices persist despite massive investments in awareness campaigns.

The persistence of residents in making electricity connections despite being aware of the severe precariousness of their practices provokes an examination of the logics that

underpin residents' endurance. While electricity is essential for ordinary people for its functional purposes of heating and lighting, it also holds a symbolic value where it resembles a modern urban experience. Kirsch (2005:202) amplifies this point by noting that electricity represents a desirable standard of living and way of life, modernity and self-respect; being disconnected, on the other hand, nourishes feelings of marginalization and degradation, and is even considered detrimental to human interactions.

While Eskom electricity has functional and symbolic importance for residents, it is sometimes out of reach due to the cost of Eskom vouchers, at odds with people's lived realities or even absent for some residents. To take charge of their own electricity access, residents gamble by circumventing, adapting and appropriating Eskom electricity despite knowing the potential bodily, socio-political, and legal repercussions of their practices. In this thesis I explore the mix of agency and precariousness that are entangled in the everyday practices of ordinary people making electricity connections. I conclude by arguing that residents' improvised electricity in Witsand can be framed as some form of 'precarious power'. In improvising electricity access, residents exercised their agency to circumvent, adapt and appropriate Eskom electricity. Yet in doing this they simultaneously endured the precariousness of the daily labors, bodily risks and contestations associated with their practices. In making this argument, I contribute to an understanding of the everyday practices of the ordinary through an analytical frame that is neither dismissive of their agency nor celebratory of their struggles.

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