

Everyday Practices of Prepaid Electricity in Maputo, Mozambique

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About the Author

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Everyday Practices of Prepaid Electricity in Maputo, Mozambique

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Abstract

Prepaid systems are increasingly popular in the delivery of urban services in Sub-Saharan Africa, but remain under-theorized. Some scholars highlight the advantages of prepayment to consumers and service providers in the face of weak governments, scant infrastructure planning, unclear land tenure, and persistent poverty. Urban scholars scrutinize the inequality and social controls imposed by prepayment on low-income citizens whose social life rests on a sense of provisionality and uncertainty. This paper uses the case study of prepaid electricity in Maputo, Mozambique to investigate the dynamics of prepaid electricity in peri-urban areas in terms of access to energy, autonomy of electricity use and divisibility of energy purchases. By paying attention to the everyday practices of electricity use across these three themes, the paper suggests that prepayment enables and facilitates forms of sociability and social ordering that are not exclusively economic, but also political, familial and technological. The paper makes a contribution to expand theorizations of prepayment in the context of mainstream theories and policies of utility service delivery in poorly resourced and highly informalized urban areas of Sub-Saharan Africa.

1. Introduction

Sitting in the unlit living room of José Pedro and Maria, a young educated couple living in the *bairro* Ferroviário, while we chatted on a Sunday afternoon to the distant sound of an old Rod Stewart tune, I grasped the gist of how urban dwellers in Maputo's peri-urban areas experience prepaid electricity: "[The prepaid meter] gives you the sense that you have autonomy over your life," José Pedro asserted, "It's necessary to make things happen, instead of having things happen to you." Both in their thirties, living with two kids and a third baby on its way, Maria, a student of banking management, and José Pedro, a community development professional, are among the younger generations of Mozambicans who have been able to study, to access a moderately paid job, and to seek a better life, all of which provides them a sense of empowerment in return. While there are others in Maputo's peri-urban areas¹ in similar conditions to Maria and José Pedro, many others are struggling with poorer housing conditions, unstable jobs or underemployment, and a pervasively uncertain and provisional livelihood that threatens the ability of dictating one's life alluded by José Pedro. Investigating the ways through which urban dwellers in Maputo negotiate their everyday relationship with prepaid electricity provides an opportunity to further understand the challenges of accessing essential urban services in African cities.

Prepaid systems are increasingly popular in the delivery of urban services, especially for electricity and water. The use of prepayment is uneven across Sub-Saharan Africa, with some countries actively seeking the use of prepayment in concrete sectors (e.g. water and electricity in South Africa, electricity in Mozambique), while others are only timidly making steps towards adoption (e.g. Tanzania). The case for prepayment of utility services has been particularly relevant in the context of the Millennium Development Goals (cf. Briceño-Garmendia *et al.*, 2004), in the face of the challenges posed by climate change to the energy poor (cf. Casillas and Kammen, 2010, Prins *et al.*, 2010), and concomitant affordability aspects in infrastructure reform discussions (cf. Pachauri *et al.*, 2004, Sagar, 2005). Much of the support of prepayment thus comes from an eclectic group of specialists related with energy provision (cf. Estache *et al.*, 2002, Tewari and Shah, 2003, Casarin and Nicollier, 2008). They tend to highlight the advantages of its adoption in contexts of weak governments, scant infrastructure planning, unclear land tenure, and persistent poverty. They suggest that prepayment facilitates the expansion of access to utilities in low-income areas, empowers customers (especially the poor), and generates revenue to service providers.

Urban scholars have been critical of this positive outlook of prepayment (cf. McDonald and Ruiters, 2005, von Schnitzler, 2008, McDonald, 2009). They criticize how prepayment uses the empowerment narrative to

impose neoliberal reforms that seek to benefit service providers alone. Such accounts suggest that prepayment seeks to discipline customers and to impose an unwanted calculability of utility consumption (especially among the poor). These scholars are very critical of a technology they believe contributes to de-politicizing state-society relationships by allowing the state to distance itself from its responsibilities towards citizens.

The paper aims to engage in a conversation with urban scholars about the challenges of utility service provision in Sub-Saharan Africa by looking at the case of prepaid electricity in the peri-urban areas of Maputo, Mozambique. Findings from the Maputo case study suggest an expansion of theorizations about prepayment and a more ambivalent assessment of it than that provided in both the energy development and urban studies literature. The case study suggests that urban dwellers in peri-urban areas of Maputo, where most of the lower-income population resides, welcome prepayment and feel empowered by it, but not without a critical reflection on the material and political condition of their livelihoods. By paying particular attention to the everyday practices of electricity consumption and the interactions between users and the prepaid devices, findings suggest that prepayment enables and facilitates forms of sociability and social ordering that are not exclusively economic, but also political, familial, and technological. The everyday practices of electricity users in Maputo hinge upon their challenging livelihood conditions as well as on business practices, infrastructure planning (or lack thereof) and the prepaid technology itself. The paper suggests that existing accounts of prepayment in Sub-Saharan Africa (and in the global South more generally) may benefit from tempering their commitment to neoliberalism as a conceptual and analytical framework with a more grounded and ethnographic appreciation of the context specific conditions that make prepayment a socially and politically acceptable practice of service delivery in poorly resourced and highly informalized urban areas.

The paper is organized in four further sections. Section 2 discusses existing literature on prepayment, with a particular attention to critiques within urban scholarship, highlighting ways to expand current theorizations of prepayment. Section 3 provides an overview of electricity in Mozambique in general and introduces the case study in Maputo. Section 4 examines the practices of urban dwellers in accessing electricity in peri-urban areas of Maputo. The paper concludes with a discussion of how the case of Maputo expands questions about the everyday governance of urban life in Sub-Saharan Africa and the challenges these raise to mainstream theories of urbanization.

2. Prepayment scholarship: between accolades and critiques

Examinations of prepaid systems by an eclectic group of energy specialists, economists, and development scholars are generally positive about the benefits of prepayment for both utility providers and consumers. Prepayment is offered as an appropriate means to improve the efficiency of utility billing of low-income customers without a steady income, where there may be low levels of literacy, high rates of utility pilfering, dispersed or irregular settlement, and an inadequate street address system and/or postal service. For example, Tewari and Shah (2003) examined the introduction of prepaid electricity in South Africa and concluded that it benefited large masses of small and dispersed consumers, mostly in urban but also rural areas. They reported on how prepayment improved the capacity of the South African utility company, Eskom, to optimize its management of the metering system, its revenue, and its relationships with clients, cutting down on electricity pilferage and reducing interactions over disconnections and billing. However, they also noted that the adoption of prepayment came with unexpected problems, namely in terms of meter failures (which had to be replaced after ten years), continued meter tampering and electricity pilfering, vendor fraud, and social conflict in highly politicized contexts.

Other scholars rest their approbation of prepayment on the claim that it can empower utility users. Prepayment is said to help households manage their disposable income and to stay out of debt by consuming only what they can afford, when they can afford it (Estache *et al.*, 2002, Casarin and Nicollier, 2008). For the case of electricity, it has been argued that prepayment enables users to better manage their budget by reducing unnecessary or wasteful use (e.g. by economizing on which lights and appliances are turned on or plugged in) (Tewari and Shah, 2003). This line of argumentation is used in support of prepayment by those seeking to improve the access of the poor to quality and affordable urban services (Briceño-Garmendia *et al.*, 2004) or by those who see it as necessary that governments reform tariff systems in face of fears of social contestation (Fankhauser and Tepic, 2007). Supporters of prepayment recognize that improvements in users' welfare may involve changes in habits of consumption, such as the self-control of appliance use mentioned earlier. This may influence the social and political acceptability of adopting prepaid systems. For instance, some of the obstacles to adoption may involve the perceived inconvenience of advance purchase and the possibility of self-disconnection, although some studies suggest that disconnections are mostly sporadic and short-term (Casarin and Nicollier, 2008).

Urban scholars who have looked at prepayment of utility services have been critical of the inherently economic tone of this favorable argumentation. Despite their diverse disciplinary origins and theoretical

inclinations, urban scholars have largely converged on a critique of prepayment around three leading aspects: (a) prepayment as a proxy for neoliberalism; (b) prepayment as a disciplining technique; and (c) prepayment as de-politicizing state-society relationships.

A. Prepayment as a proxy for neoliberalism

Much of the criticism of prepayment in urban scholarship emerges in the context of infrastructure reforms and discussions about access to essential utility services by the poor. The deployment of prepayment has been heavily criticized in South Africa where it is associated with uneven, unequal and unfair processes of neoliberal privatization and commodification of essential public goods, like water and electricity (e.g. McDonald and Ruiters, 2005, McDonald, 2009). Prepayment is said to facilitate the implementation of harsh full cost-recovery policies (McInnes, 2005), often imposing disadvantageous prices on the poor (and black), when compared to the prices and quality of the services at which the rich (and white) access the same services (Flynn and Chirwa, 2005, McDonald and Ruiters, 2005). Some authors go as far as to argue that prepayment reflects a selective form of violence and punishment of the state over some of its 'unruly' citizens, as in the case of South Africa where prepayment was seemingly deployed to counter the culture of non-payment of the poor (McInnes, 2005, Naidoo, 2007, Ruiters, 2007, 2009, 2011). In the same vein, some authors note that prepayment allows for some distancing to be inserted between state and citizens, thus bypassing the confrontation over disconnections from collective services and general accountability for the inclusion or exclusion from access to it (see sub-section C below).

These debates have been essential in scrutinizing the (mostly) negative effects of policies targeting privatization and commodification of collective resources, especially when policies place paramount importance on economic viability of service provision at the expenses of social equity. Poststructuralist analyses of prepayment, with a greater commitment to an ethnographic investigation of local understandings over meta-theoretical characterizations, have denounced the ills of such 'neoliberal' policies through the analytical lens of governmentality, surveillance, and subjectification (e.g. von Schnitzler, 2008) (see below).

However, an over-commitment to neoliberalism as a conceptual and analytical lens may be a less profitable avenue for theorizing prepayment of urban services in Sub-Saharan cities than it may be for cities at the core of mainstream urban theory (Robinson, 2006, Collier, 2011, Parnell and Robinson, 2012, Baptista, 2013). A focus on neoliberalism tends to take certain concepts, such as 'the state' or 'citizens', as premises instead of objects of inquiry. This is particularly relevant in the African context, where 'the state' remains an elusive and contested reality and where

notions of the 'public/private divide' or 'citizenship' are entangled with forms of allegiance and subject-making different from those presupposed by the model of Western democracies (Simone, 2000, Blundo and Le Meur, 2009, Robinson, 2011). Moreover, centering the conceptual and analytical focus on neoliberalism, albeit pertinent, may pre-determine the lines of inquiry and deflect attention from other concepts – such as 'piracy' (Simone, 2006), 'people as infrastructure' (Simone, 2008), 'rights to the city' (Parnell and Pieterse, 2010) or 'relational city' (Pieterse, 2008) – that may be more profitable in explaining the dynamics of urban service delivery in sub-Saharan Africa. In fact, some scholars have been critical of the current analytical overinvestment in neoliberalism in urban scholarship, as it seemingly yields few possibilities for reparative and constructive readings of urban policies and imaginations of alternative and progressive futures (Ferguson, 2009, 2011, Baptista, 2013).² The analytical focus on neoliberalism tends to foreground the structural relationships between service providers and consumers, while the dynamics of collective urban service provision in many African cities relies on a diversity of roles performed by a wider group of entities and individuals (Blundo and Le Meur, 2009).

This paper seeks to expand the discussion of prepayment by paying attention to the everyday practices of using prepaid electricity and the possibilities opened up by the technology itself. By tempering the commitment to neoliberalism as a conceptual and analytical framework with a more grounded and ethnographic appreciation of the specific conditions of different urban contexts, it may be possible to expand our understanding of how prepayment comes to be a socially and politically acceptable practice of service delivery in poorly resourced and highly informalized urban areas.

B. Prepayment as a disciplining technique

Some urban scholars have criticized prepayment as a technique for remote disciplining and social control, especially of the poor (Marvin and Guy, 1997, Ruiters, 2007, 2009, 2011). Critics deconstruct claims of consumer empowerment as a mode of governmentality designed to inculcate calculation as the essential attribute and ethos of the modern and rational citizen (Harvey, 2005, von Schnitzler, 2008). Putting an explicit emphasis on the relationship between individuals and technology, the prepaid meter emerges in these critiques as a pedagogical device that restricts, rather than encourages, the possibilities of self-determination and action. In other words, prepayment's potential for empowerment is said to be an excuse for imposing a calculability and metrological scrutiny unwanted by users (von Schnitzler, 2008).

Scrutiny of prepayment in technological terms provides useful insights into how technical objects – like the prepaid meter – are invested with a

specific sociality and politics about who its users are, what kinds of lives they lead, and their political subjectivity (Akrich, 1992, Guy and Marvin, 1995). It also foregrounds the importance of everyday engagement with technical objects in understanding the way objects contribute to organize social life and, hence, to take such everyday engagements as sites for critical inquiry of contemporary urbanism (cf. Farías and Bender, 2010). However, when coupled with 'neoliberalism' as the main analytical framework, the scrutiny of interactions between technical objects and their users can over-emphasize the normative capacities of material objects and the economic nature of the relationship between the object and its user. Put differently, technical objects are instrumentalized as proxies for techniques of government seeking to enforce neoliberal policies. Yet, as Ferguson (2011, 66) noted, "[t]echniques have no necessary loyalty to the political program within which they were developed," and individuals can (and often do) use and appropriate them in unanticipated ways.

Instead of starting from a normative position regarding prepayment, this paper encourages an exploration of the everyday interactions between electricity users and prepaid meters beyond calculative economic terms. It asks whether prepaid meters can also enable and facilitate other forms of sociability, social ordering and social reproduction that are not exclusively economical, but also political, familial, or technological. In addition, the paper interrogates the extent to which the relationship between electricity users and prepaid meters is as predetermined as some critiques make it seem, or whether this relationship is more fluid and ambivalent as it comes to be re-fashioned through everyday interaction in the act of consuming electricity.

C. Prepayment as de-politicizing state-society relationships

The issue of state-society relationships has been brought up already in the context of the two previous critiques of prepayment. I would also like to draw in comments that specifically characterize prepayment as contributing to depoliticizing the relationship between state and citizens. Critics of prepayment contend that it allows for the state to distance itself from the contestation and litigation that ensues from cut-offs when households with conventional meters fail to pay their bills (Ruiters, 2007, von Schnitzler, 2008, Ruiters, 2009, van Heusden, 2009, Ruiters, 2011). The responsibility for managing the use of a collective service is said to shift from the state (or the utility provider in its place) to the consumer (Marvin and Guy, 1997). For some commentators this raises legal issues in countries like South Africa where access to basic urban services is deemed a core citizen right (Flynn and Chirwa, 2005). Through the processes of self-disconnections, the hand of the state or the utility provider becomes invisible, or socially privatized to individual households (Drakeford, 1998). As a result, critics argue, the lines of accountability for

provision of basic urban services are made more tenuous. Opportunities for contestation are foreclosed, as any problems involved in consumption are now made a responsibility of the user alone.

These critiques call our attention to how access to collective urban services, such as the provision of electricity, water, sewage and waste management, are often considered a hallmark of citizenship and inclusion in modern societies and can, for that reason, be mobilized as a space of contestation.³ However, some critiques seem to simplify the diversity of arrangements in service provision in place in many countries, whilst adopting a normative stance towards privatization. They also seemingly reduce the interaction between utility users and providers to billing, a simplification derived from critics' over-attention to the economical aspects of the interaction. Aspects like new connections to the grid, power outages, maintenance of meters, or upgrades to existing connections can also provide opportunities for contesting the relationship between electricity users and providers. These and other moments of the everyday consumption of electricity can provide opportunities for individuals to articulate their understanding of what being a 'citizen' means and what is expected (or not expected) of the abstract entity of 'the state'. Material objects, like the prepaid meter (or the conventional meter for that matter) can be widely implicated in these public affairs (Bijker *et al.*, 2012, Marres, 2012). Following Domínguez Rubio and Fogué (2013), the visibility of the prepaid meter has the potential to make electricity consumption a 'matter of concern' instead of a 'matter of fact' – something that is taken for granted in urban life.

This paper is open to scrutinizing whether the prepaid meter allows for citizenship, political mobilization and interactions with 'the state' to be enacted differently than with a conventional meter. In other words, the interest here is in investigating how the meter enables or facilitates the negotiation of the challenging relationship that electricity users hold in relation to state institutions in the context of poorly resourced urban areas, where the categories of 'state' and 'citizen' are in themselves fluid.

3. Prepaid electricity in Mozambique: energy scarcity and the urban poor

Prepayment has played a crucial role in the roll out of electricity in Mozambique. It was first introduced in the capital city Maputo in 1995 with a pilot project connecting five hundred clients. At the time, Mozambique was coming out of nearly sixteen years of civil war (1977-1992), during which the infrastructure of the Cahora Bassa dam, the country's single significant power generation plant, had been badly damaged. As a result, the state-owned electricity company, EDM (*Electricidade de Moçambique, E.P.*) acquired electricity directly from

Eskom, South Africa's electricity provider, and distributed it to a handful of users located mainly in the Southern region of the country, where Maputo is located. Mozambique's energy dependency from South Africa was not, however, a civil-war condition. In the preceding colonial period, the Portuguese never managed to invest more than a minimum in the electricity, communications and road infrastructure in order to facilitate its predominantly extractive presence. When the Cahora Bassa dam came into operation in 1975, most of its energy production was exported to South Africa, a situation that remains today. Because the country lacked appropriate transmission infrastructure, the electricity produced by the dam destined for internal consumption, especially in Maputo, was first transmitted to South Africa and then re-routed back into the country.⁴ When Cahora Bassa was compromised, EDM had to buy electricity from Eskom at higher prices. In the post-war context of high-inflation and economic hardship, EDM's relatively long and inefficient billing cycle prevented the company from generating the necessary revenues to match the cost of electricity acquired from Eskom. Prepayment became a solution for this cash-flow problem, as officials at EDM and within the government realized it would be politically difficult to impose higher tariffs on a largely poor population in the post-civil war context.⁵

Moreover, policymakers also felt that prepayment could potentially address two problems EDM had in relation to consumers: electricity pilfering and disconnections following non-payment.⁶ While the latter problem has been more easily addressed with the adoption of prepayment than the former, EDM has shown a commitment to make it the default payment system for the commercialization of electricity. After the successful pilot project of the 1990s, EDM has been substituting conventional meters for prepaid ones and fitting new connections with prepaid meters only. By 2010, seventy-eight percent of EDM's clients were on a prepaid meter, a number that rose to eighty-five percent in the city of Maputo (EDM, 2011, p24).

Policymakers and officials at EDM are quick to praise the success of the prepaid electricity system *Credelec* for transforming the electricity profile of Mozambique, even though only an estimated sixteen percent of the Mozambican population had access to electricity in 2010 (EDM, 2011).⁷ Access to electricity is also regionally uneven. In spite of the government's commitment to rural electrification and connection to the grid of the main district cities and towns,⁸ nearly two-thirds of the electricity available is consumed in the South, and particularly in Maputo (ibidem).⁹ However, there is a growing internal demand for electricity – for industrial, commercial and residential development – which EDM is struggling to respond to.¹⁰

Maputo's urbanization and economic dynamics set it apart from the rest of the country regarding access to electricity. In 2010, EDM (2010, p50) estimated that seventy-four percent of the nearly 1.2 million of the city's

estimated population had access to an electricity connection, and the number is growing steadily every year.¹¹ However, access to electricity infrastructure and the quality of the electricity provided vary across the city. There is a stark infrastructural difference between what locals today call the *cidade* (city) and the *subúrbios* (peri-urban areas). The *cidade*, also known as the *cidade de cimento* (the 'cement city') is the consolidated colonial city center located in the waterfront and built to European standards. The *subúrbios*, or peri-urban areas, are the areas outside of the central colonial core where Mozambicans were forced to locate during colonial times in dwellings made out of traditional materials, namely reed.¹² Nowadays, the *subúrbios* have mostly converted to cement block and/or brick constructions, much through the endeavor of individual households and disparate interventions by governmental or international institutions, of varying degree of formalization and planning. Jenkins (2012, p100-101) estimates that residential development occupies nearly thirty percent of the area of Maputo, sixty percent of which is unplanned and the remaining with some form of planned sub-division (both official and unofficial). Urban farming remains an important land use in the city, with an estimated twenty-six percent of the area of the city (*ibidem*), functioning as a complement to an urban economy that rests largely on informal activities – estimated at sixty-five percent of the city's workforce (*ibidem*, p91-93). In practice this means that access to basic infrastructures – such as water, sewage and electricity – is limited and dependent on individual efforts to connect households to those services.¹³ A recent study of the socio-economic conditions of households in the peri-urban areas of Maputo casts light on the difficulty of this endeavor: nearly half of the households surveyed were considered poor or very poor, with only about thirty-one percent of the workforce having some form of formal employment (as civil servants or in private businesses) (Andersen, 2012).¹⁴ Hence, even if households are able to connect themselves to basic urban services, that does not mean they can sustain their regular use.

4. Everyday electricity practices: access, autonomy, and divisibility

This section examines the everyday electricity practices of urban dwellers in peri-urban areas of Maputo in terms of three themes that emerged from fieldwork: the challenges of accessing the grid, the sense of autonomy enabled by prepayment, and the possibilities facilitated by the divisibility of electricity purchases. In singling out these themes as a result of a grounded, ethnographic appreciation of interactions with prepaid technology, the paper engages in a conversation with urban scholarship by illustrating a more nuanced understanding of the everyday workings of prepayment in the peri-urban areas of Maputo. The section is based on observation and semi-structured interviews with thirty households in ten

bairros of Maputo's North/Northeastern urban development corridor, as well as on observation and semi-structured interviews with twenty-five informants at strategic *Credelec* vending points. The households studied in this research were selected in the vicinity of sampling points of the Home Space research project, lead by Jørgen Eskemose Andersen and Paul Jenkins (<http://www.homespace.dk/>). The area covered by the Home Space project presents a fairly representative sample of the urban dynamics of the city of Maputo (see Jenkins, 2012, p136-141), and was thus deemed appropriate as a starting point for fieldwork.¹⁵

Access: the challenges of connecting to the grid

The use of electricity is seemingly widespread in Maputo. Certainly, the people I encountered in the peri-urban areas all had access to electricity, even if they used it frugally or had just recently connected to the grid. Francisco was one of the latter cases. Francisco had been living since 2009 in a modest house in the *bairro* Polana Caniço B, one of the peri-urban neighborhoods adjacent to the *cidade*. His house is a one-floor dwelling he built by himself out of cement blocks and a zinc rooftop, no finishing coat of paint, just like many other houses in the neighborhood. When I met Francisco he was sitting outside the house with his two wives and four of his ten children. Francisco had installed electricity two months ago because of his children's interest in watching TV and the troubles it generated with the neighbors. "The kids like to watch *novela* (soap opera), movie[s]," he explained. "They go to the neighbor's [house], but [the neighbor] will say that the kids soil the floor. No way to keep that going on! So I decided to put energy in the house."

'To put energy in the house' (*pôr energia em casa*) is the common expression used by Mozambicans to refer to the fitting of an electrical installation in their homes.¹⁶ What this installation consists of – in terms of number of rooms fitted with lighting fixtures and plugs – will vary according to the household's income. Among the households engaged with during fieldwork, all except those who were tenants had moved into the house prior to it being wired. Sometimes it took several years to save enough money for the installation, other times just a year or two. For instance, it took Francisco four years to get his house wired for electricity use. Inácio, a policeman who located to *bairro* Mahotas in 1998, was seven years without access to electricity. Like many other Mozambicans, Inácio used candles and the *xiphêfù*, a kerosene lamp, as sources of lighting, and charcoal for cooking. Inácio lived with his parents in *bairro* Hulene until he got married and moved with his wife to Mahotas, some 13km (8mi) North of the city center. His parents' house in Hulene was fitted with electricity for as long as Inácio remembers, so he was used to having electrical appliances. Fitting electricity in his new home in Mahotas was a matter of having enough disposable income... and finding a nearby electrical pole or transformer station to connect his house to the grid. Yet,

when Inácio first moved to Mahotas, there was hardly anyone living there and the grid did not reach his land plot. His friends would joke with him by saying he was moving to the 'bush' (*mato*). At the time, if Inácio were to request EDM a connection to the grid, he would have to pay for the actual roll out of the grid up to his door. With no neighbors to pool together funds for such endeavor, Inácio had to wait. In 2005, Inácio finally organized with two neighbors to buy an electrical pole and make the connection. Francisco, on the other hand, was lucky that his land plot was located right next to a public lighting pole. When he decided to wire his house, he just had to plug the house into it. However, the installation was costly, nearly USD\$150, and Francisco complained that "money isn't easy this days," alluding to his 3,000 Meticais (approx. USD\$100) monthly minimum-wage job at a private company. Connecting to the grid thus requires both an engagement with challenging livelihood conditions and the enduring infrastructural deficits of the *subúrbios* of Maputo.

Accessing electricity also entails an interaction with the EDM or the city's political-administrative structures at concrete injunctions in ways not necessarily taken for granted. Urban dwellers do not seem to expect that their land plots had to be connected to basic urban services – such as water, sewage, or electricity – prior to them moving in. Instead, they comply with the diverse formal requirements necessary to access these services, while bridging the gap between their condition and what the utility provider has to offer in terms of service. For instance, to request EDM a new electricity connection, the applicant has to submit a set of documentation that covers technical requirements (e.g. the electrical installation project certified by a qualified technician), legal requirements (e.g. a copy of an ID card and a copy of the land occupation title), political-administrative requirements (e.g. a declaration from the neighborhood secretariat as proof of residency), and requirements that seem somewhat random and intrusive (e.g. an electricity bill from the next door neighbor). After submitting this paperwork, EDM sends a team of technicians to visit the applicant's home to verify that the installation is according to code standards and, if so, to complete the connection by installing a meter and connecting it to the grid. This process is not necessarily straightforward either. Applications can linger at EDM for longer than desired (sometimes two or three months). The staff may suggest an individual 'compensation' for speeding up the process, but this payment may be avoided if the applicant happens to know someone connected to EDM who can put in a good word. Applicants may have to pick up and drive EDM's technical team to their homes for the inspection and connection procedure, which may involve hiring some local taxi driver or paying a friend for the service. Once the connection to the grid is complete, the technical team will most probably expect the applicant to provide them with a *refresco*, a 'refreshment' in the form of a soda, a beer or a small monetary gratification.

It would be unfair to say that EDM is unaware or unconcerned with the pervading internal irregularities experienced by its present and future customers. In conversations with company officials and, more pointedly, with technical managerial staff, I sensed an effort to get the organization to work more efficiently for the benefit of its customers (and for the sake of greater revenues too). They were also concerned with circumventing possibilities for EDM staff to request unlawful individual compensations and sought to streamline and computerize procedures as a solution. Despite these efforts, the process of managing electricity users remained mired with many moments of uncertainty, thus leading individuals to mimic and perform a formality that is not clear to either the service provider or the user.

The cases of Francisco and Inácio are illustrative of the wider experience of urban dwellers in Maputo's peri-urban areas regarding the social ordering involved in 'putting energy in the house'. To Maputo's urban dwellers, accessing electricity seems an inevitable and essential requirement of urban, if not simply, modern life. It requires their personal endeavor amidst challenging livelihood conditions. It demands that individuals mimic a social order that reflects a form of 'inverse governmentality', "a form of reason [by urban dwellers] that takes as its object the problem of governance," as Nielsen (2011, p329) put it. In other words, electricity users must take on the responsibility of addressing the shortcomings of a state apparatus, here represented by the state-owned utility company EDM, which is unable or unwilling to take the role of an effective and efficient provider of services to citizens. These findings suggest a more nuanced reading of contemporary trends of urban service provision in African cities than critiques in urban scholarship point to. The prevailing ambiguities of the dualities public-private or state-citizen experienced in cities like Maputo require the expansion of current theorizations of service provision to engage with the performativity of those concepts in everyday practice.

Autonomy: discipline, technological literacy, and political consciousness

Urban dwellers in Maputo were used to experiencing much uncertainty while using electricity with a conventional post-paid meter. Many of those who connected to the grid prior to the mid-1990s (and even well into the early 2000s) were fitted with conventional meters. They reported receiving electricity bills with unexpected sums to pay, either because the billing covered two or three months of service or because it accounted for an unexpected amount of electricity consumption. Fernando, a retired mineworker living in a well-kept house with his wife and three children in *bairro* 3 de Fevereiro, relayed his experience as one in which EDM's performance was troublesome: "I had lots of troubles with the old [conventional] meter. EDM had no control and when they did their

[billing] estimate, they did it randomly (*de qualquer maneira*). One time I had to pay 1,500 Meticaís [approx. USD\$50]. I went to the main office and requested a metering report and because I had written down the meter readings [we found out] they owed me money after all!" For electricity users like Fernando, these unexpected bills were problematic on many levels. Households would soon have their electricity account in arrears, because bills could amount to as much as what the breadwinner could make in a month. If the household wished to contest the bill, it would have to do so after paying it or risk being fined, disconnected, and then have to pay to be reconnected again. Moreover, setting the record straight could involve several trips to EDM, complicated paperwork and procedures that many could not follow, and, more importantly, hours of work and income foregone. In sum, the conventional post-paid meter was a headache to many families.

It is in this context that prepaid meters appear to electricity users in the peri-urban areas of Maputo as a welcome change to their relationship with EDM. When asked what they thought of the prepaid system *Credelec*, most people expressed some form of satisfaction, especially when compared with the earlier dealings with the post-paid billing system. People often expressed their satisfaction with prepayment in terms of 'autonomy' or 'control' over spending and consumption. For instance, people would favor this system because they would have unmediated control over how much they spent on electricity and when. The opportunity for 'unmediated control' – i.e. by getting EDM out of the equation – seemed to be the important aspect of prepayment. People no longer depended on the uncertain performance of EDM regarding billing in order to know how much they would have to pay for electricity. It also allowed them to avoid debt and that was welcomed too.

People consumed what they could afford and that gave them a sense of autonomy and empowerment, even if consumption was judicious. Most of the people I met at the vending points expressed exactly this feeling. For instance, Júlia, a university-educated stay-at-home mom in her mid-20s, felt that with *Credelec* she could control how much she used. In the four years she had been using it she "never let it run out." Like Júlia, many others managed electricity very carefully and, hence, were seldom forced into self-disconnection from the grid. Alberto, an informal worker living in *bairro* Maxaquene D, explained his use of electricity this way: "I have control over the energy. When it is running out, the little money I have, I'll always go buy [more credit]. I like to leave it at seven or eight [kWh], which is enough for three days. With *Credelec* you can control your spending. With the old [post-paid meter], you used energy thinking you used 300, 400 [Meticais] and then you got a bill of 500 [Meticais]! This way, I'll know how to use [energy]."

'Knowing how to use' (*saber como usar*) electricity often meant that members of the household had to discipline themselves – individually and

each other – about how much they could use each day or over the course of a week or month. In line with existing ethnographic accounts of prepayment, the disciplining took place through controlling, for instance, when the lights would be on or which appliances were plugged in and in use at any given time. In a few of the households studied, the lights would be turned on at sunset and switched off right after the *novela* was over, around 9 or 9.30pm. Raul, an engineer who works for an international aid agency, asserted this was a very common practice at Mozambican households. That was the reason why, he assured me, I would see many people lining up at vending posts at the end of the workday: “For the Mozambican all that matters is that you go home and you can watch your *novela*, then the *telejornal* (the news), and after that another *novela* (...) When it gets to 5pm you can see people lining up at the vending post so they can buy some Credelec for the night. They will buy some 20 Meticaís [approx. USD\$0.70], which will last some four or five hours. By 11pm the lights are out.” Individuals exercised this ‘disciplined autonomy’ of electricity use as part of their daily routines, thus supporting views that technical objects like a prepaid meter contribute to organize social life.

In seeking this ‘disciplined autonomy’ – or as a result of it – individuals became more electricity literate and learned to approximate how much electricity was involved in each domestic activity. Ironing was known to ‘take up’ too many kilowatts, unlike refrigerators and freezers. Those with electric stoves would turn them on just to warm up leftovers, instead of cooking a full meal. If there was not enough energy credit left and no one in the household had money available for a top-up, then refrigerators and freezers could be disconnected to reduce consumption. Even though these situations happened to some of my informants, most of them admitted they would find some way of getting money for a top-up as soon as possible, even on that same day. Unsurprisingly, once a household is connected to the grid, it is seemingly ‘hooked on’ electricity.

People also became electricity literate in ways seemingly made easier by the technology of the prepaid meter. It was not that they knew exactly how the electrical system worked, how the meter calculated the consumption, or what a kilowatt-hour (kWh) meant. However, users knew that with 100 Meticaís (approx. USD\$3), they could buy some 30kWh worth of electricity that would last for a week.¹⁷ This was practical knowledge they developed from everyday interaction with the meter in view of controlling consumption. The triad ‘100 Meticaís – 30kWh – 1 week’, albeit not the same for every household, was a simple heuristic individuals could grasp easily in their everyday calculations, irrespective of their level of technical literacy. These findings are in general agreement with theorizations of prepayment as a pedagogical device, while tracing the everyday dimensions and a nuanced understanding of the learning involved.

While we may expect that people go about their lives without giving too much thought to the implications of technologies such as prepayment, conversations about the *Credelec* system invariably elicited contemplations rife with political consciousness and reflections on the economic conditions of the household. Inácio, for instance, was well aware that his salary did not allow for a carefree use of electricity at home. But, given the circumstances, prepayment allowed him to reach a certain level of comfort: "Everybody wants to be well in life," Inácio asserted, "[with Credelec] no one is inhibiting me [from using energy]. I'm the one who is saving. I'm the one who has to control [energy use]... For example, if I'm going to make a tea for myself, just for myself, I'll probably wait for the kids. We try to make everything at the same time... If I had [a bigger] salary, I wouldn't need to inhibit myself." Moreover, people recurrently brought up discussions about the wider social and political conditions of the country, the perceived unequal distribution of wealth and resources, the corruption and scandals traversing the political and economic arena, even the contradictions of international policies. For instance, Cristovão spoke of the illicit requests of EDM staff in terms of how illegality is taken lightheartedly and as something inherently Mozambican: "This is the country of *marrabenta* (traditional Mozambican dance)... Legality is something that doesn't go with our culture." My field assistant, Aires, told me that complying with legal rules involved a "*ginástica elástica*" (an 'elastic gymnastics'), thus highlighting the flexibility and fluidity of legality and formality. Inácio, the policeman, related stories of interference by 'government big-shots' in petty crimes being dealt with at police stations. Manuel, the high-school teacher, was very critical of how the Millennium Development Goals were lowering the substantive quality of education in Mozambique, in order to increase the number of high school graduates in the country. All these disparate conversations emerged as we spoke about connections to the grid, about electricity consumption, or about everyday livelihoods in Maputo's peri-urban areas. They signal the wider political consciousness that can be elicited while using electricity at moments other than the billing or acquisition of electricity.

Ultimately, acknowledging the sense of autonomy, control or empowerment felt by user of prepaid electricity does not forego a critique of the disciplining aspects of the technology or of social inequality in Mozambican society. Instead, it acknowledges that the relationship that urban dwellers develop with prepayment is more fluid and ambivalent than what some commentators in urban scholarship allow. Overall, findings from the Maputo case are in support of current critiques that identify the disciplining and pedagogical attributes of prepayment but are in divergence with its perceived de-politicizing effects. Contrary to some scholarly comments, people generally welcomed having a prepaid meter and felt the device had a positive impact on their lives. In face of the many uncertainties of the relationship with EDM mediated by the conventional meter and the challenging livelihood conditions, having a machine that could be controlled by the household was seen in a positive

light. Current critiques in urban scholarship that collapse political and technological dynamics of prepayment within an economic frame would benefit from expanding its (mostly negative) view of prepayment. They should encompass also the ways in which prepaid meters allow urban dwellers to organize social life, even though this may involve a 'disciplined autonomy' and the micromanagement everyday routines that is reflexive nonetheless of wider social inequalities.

Divisibility: social habits and social orderings

It is perhaps the divisibility of prepaid energy – the possibility of buying as many units as one has money available for – that makes prepayment a convenient and familiar everyday practice.¹⁸ At local markets, *barracas* (home-based stores) or *vendas* (street stalls), one can find ready-to-buy sets of three bananas for 10 Meticaís, four potatoes for 20 Meticaís, several other conjugations of food staples, as well as a day's-worth tin of charcoal, washing soap, or rat poison. Hence, being able to buy a week's worth of electricity fits a wider familiar practice, one concurrent with a life dependent on uncertain daily work. Cristovão, who claimed to be unemployed even though he ran an after-school tutoring service from his home, made it clear to me that many Mozambicans, like himself, "will only get money for the day on that same day. You'll buy [energy] with whatever money you make. When you have 20 Meticaís, you go buy [energy]." This uncertainty extended to the monthly consumption of electricity by any given household. When asked how many Meticaís the household spent every month on electricity, many people would offer a round, if uncertain, figure: "200 or 250," "some 500, 600, or 700," "900 for sure." When discussing how many times per month the household bought electricity credit, people would say at the end of the month more often than not, but then conceded that they would buy more credit when needed. Expectedly, the more permanent the income, the clearer people had it when and how much electricity they bought.

The preference for the divisibility of credit purchases fits within the challenging livelihood conditions of many residents in Maputo's peri-urban areas. Manuel, a high school teacher and the only informant to confess his family pilfered electricity prior to being fitted with *Credelec*, pressed this point further with greater clarity: "We live on estimates," he said, "You sit down and you add up the numbers to see how much you're going to spend on food, charcoal, and so on. We don't have much to spend, so with the little we have, it will have to be enough for everything, more or less." Raul explained this 'accounting' with raw numbers: "An average Mozambican makes some 3,000 Meticaís a month. I spend about 900 [Meticaís] in electricity, which is for lighting, a refrigerator, a TV, and an iron. To this you have to add the food expenses that an average family of seven spends: 750 for a 25kg bag of rice, 450 for a 25kg bag of corn flour, and 300 for 2 bags of pasta. All the food makes up 1,500 [Meticaís],

without the electricity, and we are mid-way to the monthly budget. Then you also have to pay for water and cellphone. So, of course people need to save on electricity." Prudêncio, who has been unemployed since becoming paraplegic after a nasty late-night mugging, expressed similar concerns. Prior to the assault, Prudêncio's monthly income was also a minimum wage and spent a large part of it on transportation connections to work from his home in *bairro* Polana Caniço A. He asked me, less rhetorically than indignantly: "How do you live on that? It all goes away in a month worth of *chapa* [i.e. transport]! I had to make three connections on my way to work and then back again. There would be nothing left at the end." Hence, when the household income must stretch to cover as many goods and services as possible on the basis of a daily (yet uncertain) income, being able to buy small electricity top-ups is a convenient option.

Notwithstanding its familiarity, the divisibility of energy prepayment allowed for the unsettling of social relationships within the household in ways that were not simply economic. Mozambique remains a very patriarchal country.¹⁹ When the male head of the household was unemployed and relied on other members of the family to provide the income, conversations were ridden with evasive pretenses of control of the household or with timid admissions of shame. In such context of formal patriarchal authority, prepayment allowed younger working males (and even females) to gain some autonomy and stake authority claims within the household. Jorge, the oldest son of Prudêncio, and effectively the breadwinner of the household alongside his mother, was able to watch TV, listen to music or play movies on DVD in his free time unmolested. Josué, a formal worker at a restaurant chain, admitted to having many discussions with his eldest son, also working for the same restaurant chain, because he watched too much TV and DVDs. Luísa, Josué's wife, then related to me that their son would buy electricity on his own so that "*papá* would stop complaining." In other cases, being the one that goes out to buy electricity credit allows for legitimately using more of it. In a conversation with three siblings – Jolene, Aurélio and Miguel – they talked about the endless time spent in line at the nearby vending post, often an hour wait or more. Jolene, who takes care of a *venda* (stall) out of their front yard, says that Miguel, the youngest, is often charged with buying electricity, but that he is not too happy with taking on the job. "He will say, 'now that you punished me, I'm going to use more [energy]'," related Jolene about Miguel's "revenge" for spending time in line. Jolene herself likes watching Mexican *novelas*, while Aurélio is a fan of Jean-Claude Van Damme action movies. Miguel, on his part, prefers to use the electricity that he is responsible for buying listening to the latest hits of American rapper Rick Ross and others. Their use of electricity was not much different from that of other households studied, thus highlighting a wider aspiration for accessing the most common elements of contemporary modernity.

While residents of Maputo's peri-urban areas will experience the divisibility of prepayment differently depending on their income, these findings suggest that the possibility of buying electricity according to the money available is a convenient and familiar everyday practice to many urban dwellers. Acknowledging the convenience of prepayment to lower-income households is not a nod in support of privatization of urban services or a gloss over the challenging urban conditions of Maputo's urban dwellers. In fact, those I spoke to were very well aware of their condition and did not glorify it. Instead, advancing an appreciation of certain aspects of prepayment recognizes the opportunities it allowed households and individuals to live what they perceived to be a better off, more dignified livelihood. Through its divisibility, prepayment provided an opportunity to bring some order into a livelihood pervaded by provisionality and uncertainty. Moreover, divisibility also opened possibilities for unsettling existing social relationships within the household and beyond, whether in terms of kinship, gender, age, status, or with the wider community.²⁰ Overall, prepayment shapes social habits and invokes (new) social orderings in ways that enable everyday negotiations of relationships, some of an economical order between the electricity user and the service provider, but also relations that lie elsewhere in the spectrum of sociality.

5. Conclusion

This paper examined the everyday electricity practices of urban dwellers in peri-urban areas of the city of Maputo, Mozambique. Set in conversation with critiques of prepayment in urban scholarship, the paper sought to expand the theorization of prepayment beyond critiques that it operates as a proxy for neoliberal reforms, a remote disciplining material device, or that it de-politicizes state-society relationships.

Findings from this case study suggest that prepayment was largely introduced in Mozambique as a way of dealing with an energy supply constraint and an economic deficit during civil war times. Instead of subjecting households to simple economic relationship with the service provider, this case illustrates how prepayment enabled and facilitated forms of sociability and social ordering that were also political, familial or technological. Access to electricity in peri-urban areas of Maputo hinged upon the challenging livelihood conditions of urban dwellers, the informal and impermanent employment circumstances, and the low or unstable sources of income. Becoming an electricity user, however frugal that use may turn out to be, relied on the individual efforts of households, sometimes in concert with neighbors, in response to less than clear (or licit) business practices. It depended on performing and mimicking a semblance of formality in the face of a state apparatus that is unable or unwilling to effectively provide infrastructures and a quality service to urban dwellers. Prepaid meters allowed electricity users to develop a

sense of control and 'disciplined autonomy' over their individual lives, unmediated by the uncertain relationship with the utility provider. This control came with a judicious use of electricity made acceptable through the micromanagement of domestic activities and individual behaviors, as had been singled out by urban scholars elsewhere. Yet, the relationships developed between electricity users and prepayment turned out to be more fluid and ambivalent than what some urban scholarship allows. People became more energy literate in ways facilitated by the practical interactions with the technology of the prepaid meter. Discipline and the control over electricity consumption were made easy by the divisibility of electricity credit purchases, a practice familiar to other domains of everyday life. Divisibility also unsettled familial relationships within the household, where electricity consumption became a means of asserting claims of authority otherwise unthinkable. Political consciousness about the livelihood conditions of individual households was rife in many conversations about the *Credelec* system and the use of electricity. Contrary to some scholarly comments, prepayment elicited a reflection over the wider politics of social inequality in the country through the experience of everyday electricity use, and not just the economic transaction of paying for electricity. It would be interesting to follow up on how prepayment – being a constant reminder of urban poverty – enables or facilitates a negotiation of the challenging relationship that Mozambicans hold with different forms of government (e.g. central, municipal, public companies). We may ask as well if there are opportunities for an everyday politics of the meter to conjure political action and mobilization in the ways that political theory deems appropriate (e.g. popular demonstrations, protest, contestation, and dissent).

To conclude, I would like to suggest that there is space for urban scholarship to take a more positive outlook of prepayment, while remaining critical of it. The point here being that it will be more profitable perhaps to seek alternative ways of problematizing prepaid utilities than simply to overstate its negative effects. This can direct analytical attention not only to the constraints placed on the consumer by the prepaid system, but also on the roles played by a wider group of entities involved in the provision of electricity (e.g. EDM, vending shops, communications company, the municipality, etc.) and the constraints they face in contributing to the material improvement of livelihoods (e.g. from the capacity that EDM will have to supply quality energy, to the capacity of the communications company to maintain the necessary digital connections that enable vending posts to have the billing and acquisition system running smoothly, or to the ability of the government to foster a development that improves income distribution).

Moreover, the metering device does not only discipline a user's level of consumption, albeit it does that too. The device also helps the user to organize her relationship with urban services in ways that are also political. To suggest that the meter simplifies and brings some level of

certainty to the process of consuming electricity is not to suggest that the use of a prepaid meter has resolved all matters of energy consumption at the household/community level. As I have shown in this paper, what the meter has done is to bring out new relationships and diverse constraints or difficulties in the consumption of electricity by urban dwellers in Maputo – i.e. to make electricity use a matter of concern, not a matter of fact. Put differently, the meter foregrounds the actual nature of urban living in contexts of poverty and informality. Prepayment may reinforce existing inequalities, but it also facilitates efforts at living a modern, dignified life with limited resources desired by many urban dwellers. Ultimately, the meter is a reminder of a complex relationship between citizens and the state, the terms of which can only be grasped and transcended through means other than the prepaid technology itself.

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Endnotes

- ¹ The term 'peri-urban areas' is used here to refer to the areas of the city of Maputo that are outside of the colonial core, usually referred to as the *cidade de cimento*, or the city of cement. The 'peri-urban areas' are where the vast majority of the population of Maputo resides. They have varying degrees of formalization and planned development, but I characterized by having scant infrastructure comparatively to the colonial core. See endnote 12 for a more detailed explanation of the different designations used locally.
- ² Sedgwick (2003, p126) has made a distinction between 'paranoid inquiry', which she believes became "coextensive to critical theoretical inquiry", and a more hopeful form of 'reparative inquiry', open to the possibilities of a better future than the present or the past, however dreadful these may have been.
- ³ Holston (2008) shows how urban dwellers in the peripheries of São Paulo engaged these services to place political and substantive claims of citizenship to the state in Brazil.
- ⁴ There is an ongoing discussion about the fairness and economic sustainability of the deal and the price at which South Africa's Eskom acquires electricity

from Cahora Bassa, which includes the service of re-routing electricity back into Mozambique. For a detailed analysis of the history of the Cahora Bassa dam see Patrício (2010). For a historical perspective of energy in Mozambique see Arthur (2009).

- ⁵ These insights into the adoption of prepayment in Mozambique were drawn from interview accounts. Local commentators believe that FRELIMO, the political party in power since independence in 1975, uses infrastructural investments – and electrification in particular – as a political tool to win popular allegiance against the RENAMO, the opposition party and the contender of the sixteen-year long post-Independence civil war in Mozambique. Some informants close to the Ministry of Energy and EDM, as well as from international aid agencies, note how the FRELIMO government has long opted politically to keep electricity tariffs unsustainably low over time.
- ⁶ According to EDM internal statistics, in 1995 nearly 16% of the electricity available for consumption was accounted as non-technical losses (i.e. pilfered electricity), while another 13% was lost due to infrastructural deficiencies in transmission and distribution (UNDP and The World Bank, 1996, p34).
- ⁷ Comparatively, the 0.12GWh per capita energy available in Mozambique in 2010 (EDM, 2010) was well below that of more developed economies: 4.3GWh in South Africa (SSA, 2012); 4.7GWh in Portugal (FFMS, 2013); 5.5GWh in the UK (DECC, 2012); and 13.4GWh in the U.S. (EIA, 2013). The electricity available (produced, imported and acquired by EDM) in 2010 stood at 3,553GWh (EDM, 2011), more than six-fold that of 1985 (545GWh) (roughly 965GWh in 1995 and 2,097GWh in 2005) (UNDP and The World Bank, 1996).
- ⁸ Mozambique remains a largely rural country. In 2007, the UN-HABITAT (2007, p7) estimated the urban population to be at thirty six percent.
- ⁹ According to statistics provided by EDM, sixty four percent of the electricity available is consumed in the Southern region, thirty three percent of which in the city of Maputo alone (EDM, 2011, p17).
- ¹⁰ The Cahora Bassa dam is currently operating near capacity and EDM has limited capacity to generate more electricity on its own. Together with the infrastructural dependency from South Africa, there is an ongoing anxiety in governmental circles about the country's energy sovereignty. As a result, the Mozambican government set out an ambitious plan of energy production and transmission mega-projects worth over USD\$9 billion that is making many international aid agencies nervous. Some of the projects include the North-expansion of the Cahora Bassa dam, the new hydropower plant on the Zambezi river of Mphanda Nkuwa, a series of smaller hydropower stations, natural gas- and coal-powered stations, as well as a new energy transmission line from the Zambezi down to Maputo (Center-South Transmission Line). (see "Mozambique: Mozambican energy projects cost US\$9 billion." *MacauHub*. Available at <http://www.macauhub.com.mo/en/2009/03/17/6733/>, accessed on 8 May 2013).
- ¹¹ EDM (2010, p50) estimates that the average family size is 4.4 persons per household. According to estimates for 2010 by the electricity company, there were nearly 210,250 clients in 2010 connected to the grid, 93% of which were

residential clients (ibidem, p45). Prepayment coverage was of 85% of clients. According to information collected during fieldwork in April 2013, the number had risen to about 250,000 clients, with about 90% coverage with prepaid metering.

- ¹² There is some fluidity in what constitutes today the *subúrbios*. Historically, the *subúrbios* were those *bairros* (neighborhoods) that immediately encircled the central city of cement, which correspond today to Maputo's administrative Districts of Nhlamankulu and of KaMaxakeni (former Districts 2 and 3, respectively). However, during fieldwork, some people also referred they lived in the *subúrbios* when living in *bairros* outside those two districts (i.e. in *bairros* in the Districts of KaMavota and of KaMabukwana, former Districts 4 and 5, respectively). To simplify, I will use the term the peri-urban areas to refer to the areas of the city that are outside of the central core of the 'city of cement' (District of KaMpfumo (former District 1). Administratively, the city of Maputo includes the areas of Catembe, a largely rural/natural area to the South of the estuary, and the Inhaca Island. In this article, whenever I refer to the 'city of Maputo' I mean the part of the city that is to the North of the estuary, where urban development has historically been concentrated and where most development is taking place today limited to the North by the Marracuene District.
- ¹³ A recent survey of households in the peri-urban areas of Maputo concluded that only 60% had running water, none had sewage (26% had a WC with a septic tank, 28% had an improved pit latrine, and 33% had a simple pit latrine), and 75% were connected to electricity (Andersen, 2012, p24).
- ¹⁴ Although Mozambique has been hailed by international agencies like the IMF as a post-civil war success story, and despite its sustained 8% economic growth rate verified in last decade, Mozambique remains one of the poorest countries in the world, with a PIB per capita of USD\$450.36 in 2011 (Government statistics at <http://www.ine.gov.mz/>, accessed on 1 August 2012). Overall, the economic growth has not been translated in a better redistribution among the population. According to estimates for 2009, 54% percent of the country's population lives in poverty, and unlike other countries in Sub-Saharan Africa, the difference between rural and urban poverty is not substantial (van den Boom, 2011). The city of Maputo shows lower levels of poverty than the national average, at 36% of the population (ibidem).
- ¹⁵ While the area where fieldwork was undertaken is considered representative of the city's wider urban dynamics, the everyday practices detailed in this paper intend to illustrate, not represent, the engagements with prepaid technology in Maputo.
- ¹⁶ It is important from the outset to note a distinction between the terms 'electricity' and 'energy'. In Portuguese, electricity can be referred to in two ways: as *electricidade* (electricity) or as *energia eléctrica* (electrical energy, in a literal translation). The term *electricidade* is commonly used in continental Portugal. In Mozambique, however, people use *energia*, shorthand for *energia eléctrica*, to refer to electricity. This creates a problem with the translation to English, given that electricity can be produced from different energy sources. Moreover, the term *energy* may refer to a diversity of resources (e.g. gas, oil, coal, biomass, solar, wind, etc.) and the energy needs of a household can also

be satisfied with a mix of different forms of fuel (e.g. electricity, charcoal, gas, firewood) (for a recent study of household energy sources in Maputo see Atanassov et al. (2012). In order to reflect the emic category I found during fieldwork, I will use the term 'energy' whenever quoting informants or official records and will use the term 'electricity' in all other occasions.

- ¹⁷ This accounting should not be taken at face value for at least three reasons. The first and most obvious is that different households will use up 30kW in under a week or more, depending on their disposable income. During fieldwork, I found people who claimed to spend as little as 200 Meticaís or as much as 2,000 Meticaís in any given month. Second, every residential household will pay a monthly fee of about 50 Meticaís, irrespective of how much electricity it will consume throughout the month. Third, some households will have an account in arrears and their debt will be paid off in small installments every time electricity is bought.
- ¹⁸ Luís Lage was the first to call my attention to the idea of 'divisibility' (*divisibilidade*) in relation to Mozambican society.
- ¹⁹ For instance, every time I approached a woman in a household, they would refer me to speak to the *papá* – the father, the eldest man, or the head of the household – or declined to speak with me because “*papá* isn't home.”
- ²⁰ This is expectable in the case of Maputo considering the work of Bénard da Costa and Biza (2012, p7), who argue that it is impossible to understand “the different dimensions that shape and condition the life strategies of households without taking into account the set of relations (economic, social, symbolic) that they maintain and cultivate with a vast network of relatives.” In a personal communication (June 2013), Julie Soleil Archambault explained how, in the city of Inhambane, an unlit house could be a source of shame and distress for a family in relation to its neighbors.

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