



Electricity theft as a relational issue: A comparative look at Zanzibar, Tanzania, and the Sunderban Islands, India

Tanja Winther*

Social Anthropology/Power Engineering, Centre for Development and the Environment (SUM), University of Oslo, P.O. Box 1116 Blindern, N-0317 Oslo, Norway

ARTICLE INFO

Article history:

Received 15 September 2011

Revised 28 November 2011

Accepted 28 November 2011

Available online 13 January 2012

Keywords:

Electricity theft

Customer–supplier relationship

Trust

Decentralised versus centralised systems

Anthropology

ABSTRACT

Electricity theft is a growing problem worldwide. Conventional, technology oriented means for combating the problem have often showed their limitations. This paper qualitatively examines the phenomenon of theft in two distinct developing contexts. The purpose is to show the merits of applying a grounded, socio-technical and relational analysis for understanding and addressing electricity theft in particular, and for realising sustainable energy systems in general.

Material has primarily been obtained through ethnographic fieldwork in Zanzibar, Tanzania, where a centralised system provides the rural population with electricity. Furthermore, fieldwork and a household survey were conducted amongst customers and staff in the Sunderban Islands, West Bengal, India, which has a distributed system of supply. Zanzibar and the Sunderbans differ in their types of electricity governance structures, technologies, organisation and procedures for metering, billing and supply, as well as in their socio-cultural setting. Nevertheless, in both places customers' moralities and degree of compliance are conditioned by their relationship to their supplier and the particularities of the socio-technical system of provision in which this relation is formed. The issue of trust is central and the findings show how people's level of trust in their supplier becomes jeopardised in both places, but for rather different reasons. Suggestions are provided as to how analytic attention to the customer–supplier relationship, and the material objects that mediate and shape it, could be used for increasing electricity customers' degree of compliance and for promoting sustainable energy systems in general.

© 2011 International Energy Initiative. Published by Elsevier Inc. All rights reserved.

Introduction

The disturbing evidence is that losses (and theft) appear to be increasing in an era of readily available technological means (metering, for instance) to lower non-technical losses. Smith, 2004, p. 2071 (original brackets).

Electricity theft is a growing problem worldwide. The situation in many African and South Asian countries such as India is particularly worrisome (Depuru et al., 2011; Smith, 2004). Estimates indicate that in India, yearly losses due to electricity theft are over 1% of the country's GDP (Depuru et al., 2011; Tongia, 2003, p. 6; Singh, 2006, p. 1007). With 20–25% of revenues disappearing, the viability and

survivability of the electricity systems are at stake.¹ Lost income must be covered, thus resulting in a deterioration of the quality of the energy systems, a slower electrification rate and higher tariffs for those who do pay, or in the case of governmental subsidies, a reduction in funding for other public services. This latter effect often harms the poorest segment of the population the most, as they tend to be the first ones not connected when there is a low degree of electrification (Karekezi and Kimani, 2002).

Smith (2004) describes four different varieties of theft, all of which are relevant in the present discussion. Firstly, fraud denotes cases in which consumers deliberately try to deceive the utility, such as tampering with the meter. Secondly, there is stealing, that

¹ This estimate has been arrived at by partly drawing on Joseph (2010, p. 507) who demonstrates that in India the reported average transmission and distribution (T&D) losses, including theft, was 35% in 2005, although Singh (2006, p. 2482) indicates that the Indian T&D losses may be substantially higher, in some cases nearly 50%. Moreover, based on empirical examples, Smith (2004, p. 2070) provides a general method for estimating theft. He shows that inefficient systems are likely to have 10–15% losses due to technical/physical factors, whereas the remaining losses can be considered as being caused by theft. If one uses the modest estimation that total Indian T&D losses are 35%, then theft may constitute 20–25% of the generated power (minus system use and electricity allocated without charge, see Smith, 2004, p. 2068).

* Tel.: +47 22 85 89 15, +47 90 57 35 58; fax: +47 22 85 87 90.

E-mail address: tanja.winther@sum.uio.no.

is, illegal lines and connections that bypass a meter so that consumption remains unregistered. The third type of theft, often not recognised as such, is when customers systematically do not pay their arrears over a long period of time. Fourthly, there are billing irregularities.² Conventional, top-down approaches to the problem tend to centre on either technical innovations such as smarter meters; managerial methods, for example, inspection, control and audits; or system changes, typically through privatisation of public energy companies (Antmann, 2009; Smith, 2004; Tewari and Shah, 2003). However, experience shows that, taken alone, neither of these methods provides blueprint solutions to the problem. Broader and more contextually sensitive approaches are called for (Antmann, 2009; Fjeldstad, 2004; Gulati and Rao, 2007; Smith, 2004; see also Brent and Rogers, 2010).

The present discussion offers a grounded approach to the problem of theft by asking what the phenomenon looks like from the customers' point of view. What moralities and judgements are involved when people make unauthorised connections or avoid servicing their debts? The underlying approach to technology draws on actor-network theory (Akrich, 1994; Bijker and Law, 1994) and the notion of "distributed agency", which Garud and Karnøe have used for highlighting that agency is "distributed across people and artefacts and across time and space" (Garud and Karnøe 2005, p. 89, see also Wilhite, 2008). By looking specifically at customers, the presumption in the present discussion is that they are not passive recipients of electricity services, but instead continuously interact with technologies such as meters and social actors within the electricity system such as money collectors and meter readers. The utility at large constitutes the customer's counterpart in the system. Although surrounding social relationships, such as peers and the extended family, and associated technologies (e.g. appliances, buildings) are also likely to affect people's moralities and behaviour as customers, I primarily focus on the customer-utility relationship as this is constituted within specific systems of provision.

Every electricity system has its own unique qualities that deserve investigation in order to understand and meet the problem of theft (Smith, 2004). Nevertheless, in terms of electricity's physical characteristics and the system's principles for managing the customer-utility relationship, such systems share certain traits. Unlike rice, sugar and most other goods, electricity is not exchanged for money in face to face meetings between buyer and seller. When somebody has obtained a connection, electrons automatically flow through the lines according to the consumer's appliance usage, though the current itself remains invisible (Lindén et al., 2006). To ensure that supplier and customer fulfil their respective part of the contract, a regulatory, institutional, technical and financial arrangement is set up. An electricity meter is often centrally positioned here to help shape and mediate the (ideally) symmetrical relationship between customer and supplier (Akrich, 1994, p. 217). Printed contracts, consumption registration cards, tariffs and invoices also constitute common means for regulating and maintaining the customer-utility relation. Moreover, for the system to work as intended customers must be informed about the arrangement and how they are supposed to perform. Last, but not the least, customers and utility staff are involved with each other in person, such as at the time of the meter reading, payment and disconnection, as well as indirectly, for example when the utility is mentioned in the media. In total, a range of material and social factors shape and mediate the customer-utility relationship. The quality and configuration of these factors and relationships

² Billing irregularities denote situations when utility employees may be bribed to arrange for lower bills to be issued than for the power actually used, or staff may trick customers into paying more than they owe and pocket the difference compared to the amount of electricity consumed. Billing irregularities are related to the problem of corruption, which is defined as "the offering, giving, soliciting or acceptance of an inducement or reward that may influence the actions taken by any authority, its members or officers" (Gulati and Rao, 2007, p. 116). Corruption is not dealt with in the present discussion.

will notably vary on a contextual basis. As I will demonstrate, the type of provision system and socio-cultural setting contribute to shaping the customer-utility relationship and people's moralities and concerns when undertaking their responsibilities as customers.

The aims of the paper are, firstly, to show how the phenomenon of electricity theft may be understood and addressed in a more people-centred and relational way. Secondly, in following Stern (1999), there is an underlying ambition to reveal how insights into customers' ways of thinking and acting, as well as their resources and objects at hand for doing so, may be used for producing desirable and sustainable shifts in the general formation and operation of electricity systems.³ I will draw on empirical findings from two different socio-cultural settings (rural Zanzibar, Tanzania and the Sunderban Islands, West Bengal, India). The two contexts have quite distinct provisional systems; in rural Zanzibar there is a centralised grid, whereas the system in the Sunderbans is decentralised. Space will not allow for a thorough comparison of both cases, and the Zanzibar material will carry more weight than the data from the Sunderbans. Even so, by offering a joint discussion of two examples of customer-utility relationships and the moralities and practices involved regarding theft, I seek to point to a variety of factors, including technical ones, which may come into play when such associations and practices are formed.

Section 2 accounts for the method used. Sections 3 and 4 present and discuss the material from Zanzibar including the customer-utility relationship and how people judge various types of connections. Section 5 briefly outlines the Sunderban context with particular focus on customers' degree of compliance at various points in time. Section 6 contrasts the customer-supplier relationship in the two selected places, discusses the issue of trust, and provides some policy recommendations. Section 7 concludes. It will be argued that although contextually constituted, the core customer-provider relationship, and the people and objects involved in the mediation of this relationship, generally form a crucial aspect of electricity systems. Consequently, attempts to modify such systems would benefit from focusing on the ways customers relate to their suppliers and vice versa.

Method

The material from rural Zanzibar, Tanzania,⁴ is based on a total of 16 months of ethnographic fieldwork and visits stretching over a time span of 15 years (between 1991 and 2006). The overall purpose of this work was to investigate the social impact of rural electrification. The methods used included participant observation, interviews and an extended household survey in Uroa village where I resided for 10 months in 2000–2001. The survey covered 114 of 480 (23%) households in the village and was primarily conducted by the researcher in the form of structured interviews with both male and female members of each household.⁵ Technical and economical data

³ By sustainable shifts I mean to indicate that electricity is closely linked with wider questions of poverty, equity, gender equality and the environment, in addition to the immediate economic aspects. Space does not allow for an elaboration of this notion and its relation to electricity, but has been treated elsewhere (Winther, 2008).

⁴ Zanzibar is a semi-autonomous polity within the union of Tanzania.

⁵ The households were strategically selected in order to obtain a representative geographical spread that included both electrified and non-electrified domiciles. Each interview session lasted from 1 to 2 h and centred on topics such as energy use, access to information and standard socio-economic indicators such as education and income, as well as people's everyday rhythm and opinions about the good life, etc. The issue of theft was a sensitive one, and although I was an independent researcher, some people seemed to associate me with the utility company and the Norwegian electrification project. Because I was concerned about gaining people's confidence, I avoided touching on the issue of theft with people I did not know well, whereas close affiliates trusted that I would not report information about individuals to the utility. On one occasion, I asked utility staff about the number of connections in Uroa, thus causing a senior officer to suggest that they could make a house-to-house investigation to detect all, including illegal, connections. I kindly declined the offer since I did not want to be the cause of any problems to my acquaintances. This illustrates a challenge related to studying theft from a bottom-up perspective.

Download English Version:

<https://daneshyari.com/en/article/1047272>

Download Persian Version:

<https://daneshyari.com/article/1047272>

[Daneshyari.com](https://daneshyari.com)