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Energy and the Urban Poor:

Where the private sector fears to tread

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Abstract

This paper presents empirical evidence from three countries (Brazil, Nigeria, and the Philippines) plus data from secondary sources which shows that the urban institutional arrangements within the energy sector that have emerged since liberalisation have not benefited the poor. Privatisation and commercialisation of energy services (such as electricity and refined oil products) have been advocated on the grounds of economic efficiency. The assumption is that the changes in ownership and management will lead to technological advances, as well as institutional and financial innovations, in providing energy services, which will also benefit the poor.

Deregulation is underway in both the oil and electricity sectors in the three countries studied. Have the poor benefited from deregulation? Availability of these various energy sources has improved with less power cuts and LGP and kerosene being widely available throughout urban areas. However, availability is not the same as access. In terms of electricity access the number of connections has probably gone down, particularly for low-income and informal settlement households, due to strong action by utilities to reduce illegal connections. It should be noted that poor urban dwellers often resort to the drastic (and dangerous) action of illegal connections due to failures elsewhere in the urban governance framework including the contested tenure of poor urban dwellings which makes electricity utilities reluctant (or legally constrained) to provide a service. LPG and kerosene access appears to be related to prices which have increased significantly in recent years. However, can this be solely attributed to the world oil price? Part of the price increase can be linked to the institutional arrangements for product delivery. An LPG cylinder can pass through up to three levels of middle men before it gets to the end-user in poor areas, at each level there is a mark up. The formal sector is often reluctant to make deliveries to the inaccessible areas where the poor live (for example where roads are of soft sand or up steep slopes). This opens up an opportunity for informal sector energy sector service company (ESCO) to fill a market gap that the main suppliers leave. However, since these ESCOs are unregulated, improper business practices can creep in, such as putting a false bottom in the kerosene tins enabling them to charge an apparently lower price per litre than the actual market price.

With some notable exceptions, the institutional arrangements since deregulation do not appear to be serving the interests of the poor. In particular regulatory commissions need to find a balance between all parties and resist pressure from the more powerful groups at the expense of low-income households. Organisations which were meant to informing communities about targeted programmes for enabling low-income households to have better access to energy services were failing to deliver the necessary information to the intended beneficiaries. In the three countries providing the empirical evidence, there seemed to be a lack of trust in the formal organisations of the state. Participation in community organisations were found to be for reasons of solidarity and friendship and people were concerned about the time and expenses required for participation in formal organisations. In Nigeria, faith-based organisations were found to have facilitated access to energy services.

Energy and the Urban Poor:

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1 Introduction

Evidence suggests that poor urban households' livelihood strategies often do not meet the most basic of needs, increasing the vulnerability[1] of those already marginalized (CARE 1999). Energy is one of the most essential inputs into sustaining people's livelihoods. At the most basic level energy provides cooked food, boiled water and warmth. Lack of access to clean and affordable energy can be considered a core dimension of poverty. Despite this fundamental role of energy, it is neglected at the micro-level as a focus of social science research unlike other infrastructure services such as water and telecommunications.

Privatisation and commercialisation of energy carriers[2] (such as electricity and refined oil products) have been advocated by economists and the international financial institutions on the grounds of economic efficiency. The rationale is that the changes in ownership and management will lead to technological advances, as well as institutional and financial innovations, in providing energy services. Governments in the South, who might have doubts about the wisdom of allowing national resources to fall into outside hands, were left with little choice if they need finance for energy sector investment. A key shift in World Bank policy came in 1993, in which a role for private capital was made a condition of continued provision of loans necessary for power system expansion and maintenance (Wood, 2005). However, the empirical evidence that private owned utilities perform better than publicly owned ones appears to be "contradictory and inconclusive…. as ownership of an enterprise matters little to its performance. Of far greater importance …… is the context in which the enterprise operates" (Stevens, 1998: 3 quoted in Gabriele, 2004: 1320).

On the other hand, what about the social dimension of energy sector reform? The assumption has been that the reforms will benefit the poor. However, such assumptions are based on a lack of understanding of energy access and use by the urban poor as well as the institutional structures within the energy sector that have emerged since the move to a market model. In addition, the cost of energy after sector reform in developing countries is unlikely to fall since high prices will be necessary to attract private investment and to allow cost recovery (Dubash, 2003).

This paper begins with a brief overview of energy access and use by the urban poor. The paper then reviews the literature on the micro-level impacts of energy sector reforms in the South and presents empirical evidence from three countries (Brazil, Nigeria, and the Philippines) plus data from secondary sources, including governance processes in the urban energy sector. The conclusion is that the urban institutional arrangements within the energy sector that have emerged since liberalisation have not benefited the poor.

[1] Vulnerability can be defined as a condition in which there is limited capacity to respond to adverse natural or economic events, such as droughts and price rises, and social obligations such as weddings and funerals (derived from Ellis (2000))

[2] An energy carrier is the form of energy delivered to the end-user.

2 Brief overview of energy use in poor urban households

The two dominant end-uses for energy in urban households are cooking and lighting (although in certain locations there may be a demand for space heating or cooling). Urban households, irrespective of income, use a mix of fuels for both end-uses, although the fuel of preference does vary with household income. Lower income households rely on biomass fuels[3] (or coal in some countries such as China and South Africa), whereas higher income households will opt for electricity and LPG (Future Energy Solutions 2002; Barnes, Krutilla, and Hyde, 2004). Kerosene is used both as a cooking and a lighting fuel, although electricity is the preferred option for lighting. The use of a mixture of fuels, is not only to safeguard against supply uncertainties, but to match cooking styles, taste preferences and time constraints.

The available evidence suggests that urban poor people do buy their fuel however there is little quantitative data on the use of non-purchased biomass fuels. Poor people prefer to purchase fuels in patterns that match their incomes: small amounts on a daily basis. This purchasing pattern influences the types of fuel they use. Since wood, charcoal and kerosene can be bought in small quantities it is not surprising these are the favoured fuels by the poor. A consequence of this purchasing pattern is that they are paying a higher unit cost than for "bulk" purchases. At the beginning of the 1990s, the World Bank carried out a global survey of 45 cities and 20,000 households. This study found that poor urban households spend a significant portion (15 to 22%) of their cash incomes on energy (Barnes, Krutilla, and Hyde, 2004). A household survey in three urban centres in Tanzania, found that woman-headed households use a higher average percentage of their income than man-headed households for purchasing energy (Hosier and Kipondya, 1993).

3 Have the poor benefited from energy sector reforms?

Energy sector reforms which have resulted in the liberalisation of energy markets include both privatisation and commercialisation. Privatisation involves the sale of state energy companies, particularly the electricity utilities, to the private sector, as well as the opening up of the market for the private sector to provide other energy services. Commercialisation involves the removal of direct subsidies on fuels and appliances, and a shift towards market-based solutions in the provision of energy services. A number of arguments have been advanced for market liberalisation and there have been attempts to use theory to underpin the arguments (for example, principle-agent model from rational choice theory to demonstrate that state-owned institutions are intrinsically inefficient and bound to be mismanaged (Gabriele, 2004)). The assumption is that the changes in ownership and management from the public to private in the energy sector will lead to technological advances, as well as to institutional and financial innovations, in providing improved energy services in terms of cost and reliability of supply. These improvements will also benefit the poor, with the implication that there will no longer be a need for subsidies. There is little empirical evidence, particularly at the micro-level, on the impacts of the reforms and, above all, as to whether or not the urban poor are benefiting from improved services. Most research to date has focused on electricity sector reforms (World Bank, 2000).

There are positive results reported in Bolivia of high levels of access by low-income households to electricity following the privatisation of the utilities (Barja and Urquiola, 2001). In urban areas, there was more than 95% access in the lowest income quintile. However, prior to privatisation,

[3] Wood, charcoal, agricultural residues and dung.

there was already an 86% access rate for this quintile.

In another context, in the countries of the former Soviet Block prior to the political changes that removed the centrally-planned economy, urban households had enjoyed good access to modern energy. However, the transition to a market economy has, in some instances, led to a reduction in generating capacity with an accompanying fall in net consumption. For example, Scott, McKemy and Batchelor (2004) quote World Bank figures for Moldavia of a decline in generating capacity from 3.09 GW(e) in 1999 to 1.03 GW(e) in 1999. It is not unreasonable to assume that the effects of such reductions on electricity availability for urban household use are likely to be negative.

Illegal connections are a problem for both utilities Illegal connections mean unpredictable loads, damage to the infrastructure and a substantial loss of revenue. For example, in Bahia State, Brazil, it was estimated that, at the beginning of the 21st century, around 11% of the electricity distributed was diverted to illegal connections (Andrade, 2004). The general response for utilities is to disconnect the illegal consumer.

However, there are examples of better practice. In Nigeria, the utility found that where meters are installed, payments are not made regularly so in response introduced slot meters in some areas. To its credit, the utility has not charged a higher tariff for slot meters, as is commonly the case (Friends of the Environment 2005). In Argentina, the utility Edenor has introduced a prepayment system using a voucher system with a printed number which has to be keyed into a pad on the meter – similar to pay-as-you-go mobile phones. The utility ensures easy access to buying the vouchers by using machines similar to automatic teller machines (ATMs) installed in convenience stores. 90% of respondents in a survey of 150 residents of the district in Buenos Aires where the meter trials took place reported that they appreciated the utilities policy of agreeing to convert illegal connections into legal ones with the provision of a pre-paid meter (Annecke and Endelli, 2006).

In the petroleum sector, improved availability of supplies seems to be linked to energy market liberalisation. Kerosene appears to be widely available from a range of outlets (service stations, shops and dedicated kerosene pumps). A similar picture is also reported for LPG. In Kenya, for example, the distribution system has expanded and a variety of outlets sells and refills cylinders. The market has also responded to the purchasing patterns of low-income households. Small cylinders are available and saving and loan schemes, which enable access to the cylinder and gas, are in operation (SPARKNET, 2004). In Lima, Peru, the switch to a competitive private distribution network for LPG and kerosene which increased the number of fuel distribution outlets thereby making the fuels more widely available was identified as a significant factor in almost 100% of urban households making a transition to LPG and kerosene for cooking (ITDG, 1998). LPG providers appear to have a different client orientated service approach to the electricity utilities. In the Philippines suppliers deliver cylinders by truck and an order can easily be placed by telephone. The sector also appears to be responding to consumer demand, for example, supplying different sizes of cylinder. However, it is not all good news. In Nigeria, urban poor households which use LPG purchase it from petrol stations or private dealers which can be very expensive. In many cases, a cylinder passes through up to three levels of middle men before it gets to the end-user, at each level there is a mark up (Clancy et al., 2006). Even more worrying is the situation in Rio de Janeiro, Brazil, where local criminal gangs control the LGP market in the shanty towns and impose a surcharge of 20% above the price of authorised suppliers (WEC, 2006).

Sector reforms open up opportunities for other actors to enter the supply market. Does the

opportunity extend to the small scale energy entrepreneur? Many goods and services for the urban poor are provided by informal sector entrepreneurs. Does this apply in the energy sector? A study in Lima, Peru found a thriving small-scale entrepreneurial system for supplying natural gas and kerosene to households (Wakelin et al., 2003). Competition helped provide customer-oriented services, for example, LPG cylinders could be delivered to households (heavy to carry) and kerosene could be bought in small quantities (matching low-income budgets). Unfortunately, the study did not mention how long it had taken to develop such services except to mention that some kerosene suppliers had been operating for twenty years. It is therefore difficult to draw conclusions as to whether or not market reforms had influenced the supply system.

However, it would appear that it is not sufficient to "open up markets" and that other factors also influence whether or not the private sector is interested in or able to deliver fuels. For example, in Mozambique, distribution of LPG has been considerably hindered by the poor state of the roads (ITDG Zimbabwe, private communication). In Senegal, it was found that in order to promote a switch to LPG, it was necessary to manage the fuelwood and charcoal markets, for example by enforcing regulations, to reduce the ready availability of these fuels in urban centres (von Molthe, McKee and Morgan, 2004).

The evidence about the effects of energy market liberalisation on prices is not so positive. Privatisation has generally been matched by price increases. Table 1 gives data for the petroleum sector in Nigeria where the government is pursuing a policy of commercialisation prior to privatisation. Price rises do produce a fuel transition but for the poor this appears in general to be downwards. In urban households, price rises have induced energy conservation measures which have resulted in potentially negative health effects and a reduction in the quality of life. A study in Ghana reported a reduction in the number of cooked meals and a switch to cheaper fuels (wood and low quality charcoal) as a result of energy price increases (Future Energy Solutions et al., 2002).

Higher electricity tariffs lead to a significant loss of revenue by utilities through increased theft. For example, in Bahia State, Brazil, 11% of the electricity distributed goes to illegal connections (Andrade, 2004). Not all electricity used through illegal connections is with the explicit compliance of the end-user. Research in Ghana found poor urban households were the victims of deception with unscrupulous fellow residents making illegal connections but collecting the payments on the pretence of making the payment to the utility (Bannister, 2002). There are also concerns that the deregulation of energy markets has not been matched by a policy framework in which social objectives, such as equitable access, have been safeguarded (Maduka, 2004).

Table 1

Prices of Petroleum products in Nigeria (1990-2004)

Products	1990	1991	1993	1994	1998	2000	2002	2002	2003	2004
Gasoline	0.51	0.6	3.25	11	20	22	42.50	32/34	40.23	42.80
Diesel	0.35	0.5	3.0	9	19	8	42.00	32	38/39	40.50
Kerosene	0.15	0.4	2.75	6	17	19	32.00	32	32/53	41.25
Fuel oil	0.30	0.5	2.75	9	12.40	230	230	230	275	275

SOURCE: NNPC (Nigeria National Petroleum Corporation) (Maduka, 2004)

All prices are in naira ($1 = 130 naira at exchange rate January 2004)

4 Energy sector reforms benefiting the urban poor in Brazil, Nigeria and the Philippines?

4.1 *Background to the urban energy study*

Energy has both a direct and indirect impact on the livelihoods of the poor. Whilst there is a significant body of knowledge on how energy affects the rural poor, relatively little research has been undertaken into the relationship between energy and the livelihoods of the urban poor. Empirical data on the urban poor and energy is lacking and much policy making is based on assumption that the urban poor have better access than the rural poor to clean forms of energy (such as LPG and electricity) with their more efficient conversion technologies and so make a smooth transition to these clean fuels. However, recent research has begun to question whether or not this notion of a "smooth transition" is an oversimplification (Barnes, Krutilla and Hyde, 2004).

It is against this background that a research project, funded by the UK's Department for International Development (DfID), was undertaken to gain insights, based on micro-level gender disaggregated data, of the issues around urban energy supply and use for poor people's livelihood strategies (Clancy et al., 2006). The research used as its starting point the livelihoods framework. Energy is seen as enabling asset within the framework for reducing the drudgery, saving the time and improving the livelihood strategies. However, whether men and women benefit equally from improving access to energy is not clear. Therefore an analysis of the energy-gender-poverty linkages needs to be explored within the livelihoods framework. Unfortunately, such an analysis would require a large amount of data which would not haven be possible to collect and analyse within the scope of the project. It was decided that the multiple aspects of the energy-poverty-gender nexus within the livelihoods framework could be adequately explored by the use of hypotheses. The two hypotheses that are relevant in the context of this paper are:

1. Social networks and relationships facilitate access to urban energy services (*social assets*).
2. Energy sector reforms lead to improved access by urban enterprises to energy services (*livelihoods context)*.

Empirical data was collected from low-income areas in three countries: Nigeria (Lagos and Abuja), the Philippines (Manila and Marikina) and Brazil (Salvador). Data collection involved surveys, analysis of secondary data and interviews with key informants. In Nigeria, data was collected through questionnaires from four poor urban communities in Lagos and Abuja (two from each city) with a total sample size of 598 households. In the Philippines, stratified purposive sampling was used to identify two barangays (the smallest unit of government) in the six districts of the city of Manila which resulted in a sample size of 600 respondents from the six districts for a more general qualitative questionnaire related to energy and livelihoods with 60 respondents from the sample being selected for focus groups to provide qualitative data. In Marinka, the process was repeated in four barangays with 400 respondents in total for the quantitative questionnaire and ten respondents from each barangays were selected for focus group discussions. In Salvador, Brazil, 259 households were surveyed in Plataforma and 255 in Canabrava. Two focus group discussions, one in each community, were held.

The three countries have a number of similarities which would help in generalisation. All three

countries had recently experienced economic crises which had increased the number of people in urban areas relying on informal sector enterprises. They are countries with large urban populations living in big cities. Privatisation in the energy sector had already started in the Philippines and Brazil and Nigeria was beginning the process when the research was started in 2005. Energy policies did not specifically take into account the needs of the urban poor.

The study did not set out to be comparative but efforts were made to ensure that comparable data was collected.

4.2 *Study findings*

At the time of the study privatisation in the electricity sector was already in place in Brazil while the Philippines and Nigeria were at different stages of transition. The oil sectors were also in the process of being deregulated. The changes in energy markets have required the introduction of new institutional structures. In Brazil, regulatory agencies have been established in all the major infrastructure utilities. In Nigeria, the energy reforms, including deregulation, had yet to deliver benefits since the Power Holding Company of Nigeria (PHCN – formerly the National Electric Power Authority (NEPA)) which was the sole distributor of electricity and hence a monopoly. The government created in 2005 the Energy Regulatory Commission that will regulate pricing of power distributors. However, at the time of the survey, it was too early to make an assessment of the impact of this body.

Access and availability

One of the benefits advocated for reform is that liberalisation will open up the market and allow new suppliers to enter and provide services. The reforms in the oil sector rather than in electricity seem to be succeeding in bring improvements to low income households access to modern energy. In the Philippines, the deregulation of the oil industry led to the entry of more players into the petroleum retail business. LPG can now be easily obtained from various retail outlets. A negative fall out from the proliferation of LPG retail outlets has been tampering with LPG cylinders by some retailers. However, the regulator has been quick to react to maintain consumer confidence that cylinders provide the right quantity and good quality of LPG. Routine and complaint-related inspections and investigation of LPG establishments and gasoline stations are currently being pursued to protect the public against illegal and unfair practices. However, in the case of the petroleum sector in Brazil, privatization had not been successful in generating more competitiveness and thus a decrease in price to consumers as it had in other sectors. Although the international oil price has been a contributory factor in the failure of prices to fall, the petroleum sector regulating agency is considered to have been subject to undue pressure from special interest groups which have prevented pricing structures favouring low-income groups.

All of the communities surveyed had electricity supplies. Electricity supply does not appear to have improved in terms of quality – although power cuts have virtually become a thing of the past. However, all three countries continue to experience fluctuations in voltage which can damage equipment and undermines consumer confidence in the utility. The level of connections has not improved with privatisation. Indeed, the number of connections has probably decreased in part due to price rises leading to disconnections due to unpaid bills and/or utilities pursuing a vigorous policy of tackling illegal connections.

Petroleum fuel supplies in Brazil have been well established in the urban communities surveyed. In the Philippines, oil sector liberalisation has brought an expansion of services and so there is increased availability (but not necessarily access) to these fuels for low-income

households. Kerosene can be obtained from stores within 250 metres of households in the districts surveyed and few households reported supply shortages. The uncertainty about electricity causes entrepreneurs in the Philippines to purchase stand-by generators – despite improvements in the supply – and some households in Nigeria do likewise (44 out of 598 households in the survey). The supply of petroleum products in Nigeria is well established in the urban communities surveyed. Petroleum products can be bought from any fuel station while kerosene is sold by vendors in the communities. In these cases, consumers are usually paying a higher price compared to the price at fuel stations – although this can be interpreted as paying the cost of convenience. LPG sometimes passes through three levels of vendors before reaching the customer.

Perceptions by consumers and utilities

The public perception towards the energy service provider differs and can be linked to the level of service provided. Both electricity and petroleum products have become more expensive however there is less resentment about petroleum sector prices than there is towards electricity prices. At the same time there is a much higher level of consumer satisfaction in relation to improvements in supply of petroleum products while there is dissatisfaction with the continued poor quality of the electricity supply. In part it is possible to attribute consumer satisfaction to the manner in which the energy utilities see their customers.

When it comes to supplying electricity to poor districts, utilities still seem to see clients in poor urban areas as a problem rather than as customers. Much effort in Brazil is made on reducing illegal theft of electricity but there seems to be little effort in trying to ensure that people become legal clients. People have to pay for the installation of their own meter. The utility claims to run a monthly instalment plan to pay for meters, however, this scheme would appear not to be well publicised. However, none of the respondents surveyed knew of the scheme. In Nigeria, the electricity utility company also sees the poor as a liability. In an effort to improve payments the utility company has introduced slot meters in some areas. To its credit, the utility is not charging a higher tariff for slot meters, as is commonly the case.

There is a lack of consultation with urban poor people about energy services. In Canabrava (Salvador, Brazil), a biogas plant had been installed on a nearby rubbish dump as part of a pilot project producing electricity sufficient to supply around 100 households. However, the electricity generated is used to light a park rather than households. It is estimate that the dump has the potential to provide, at low cost, electricity to meet the needs of up to 50.000 families for up to 20 years. The community are well aware of this and feel resentful that they have not been consulted nor benefited from a “resource” that has for many years been seen as the cause of a number of problems (including health) for them.

The situation in the petroleum sector is better than with electricity where there is a greater sense of client-oriented service, although there is still room for improvement. In the Philippines, inspections and investigation of LPG establishments and gasoline stations are made in response to complaints about tampering with cylinders. In the Philippines suppliers deliver cylinders by truck and an order can easily be placed by telephone. In Nigeria, very few urban low-income households use LPG, and those that do, pay the price related to the organisational structure, cylinders passes through up to three levels of middle men before they get to the end-user, who also has to carry his/her cylinder to the dealer. It has been a long standing yet well known complaint of users of LPG cylinders that managing of the gas use is difficult since there is no means of telling how much gas remains in the cylinder (other than a very rough estimate of

weight)[4]. However, no-one seems to research providing a cheap and reliable method of estimating the quantity of gas remaining which would place LPG on a par with kerosene and electricity.

The energy utilities should be more aware of the effects that their attitude to consumers has on their business. The high price of electricity does cause resentment. For example, in the Philippines the basic household tariff has risen from 3.4329 Pesos/kWh in June 2003 to 4.8970 Pesos/kWh in June 2006 (Clancy et al., 2006). Here low-income communities demonstrate resistance to increases (a sort of "silent protest") by many otherwise law abiding citizens condoning illegal connections, from passive toleration through to as warning of the approach of a utility representative[5].

Energy utilities, whether private or state run, can have positive attitudes to customers. In Brazil, in 2001, the utility sent teams to low-income households to look for energy conservation opportunities. In most cases, households had very old refrigerators with old rubber seals around their doors that no longer were able to properly seal the doors and hence ran inefficiently. The company helped many customers replace these seals while at the same time generating a lot of good will and reducing their investments costs.

Role of government

Governments also have a role to play in the era of the privatised energy utility. Again the survey reported here found different levels of success. Social policies in Brazil have certainly facilitated access by low income groups to LPG and electricity through voucher schemes Campaigns are variable in getting their message across to low income groups. In the Brazil, the government introduced in 2002, the national Low Income Consumers Program (*Programa do Consumidor de Baixa Renda*) part of which includes a reduced tariff electricity to customers who consume less than 100kWh/month. More than half of the households in the sample, in both neighbourhoods, despite being eligible, were not aware of this scheme. There was a similar finding in relation to the Federal Government's LPG vouchers (*Auxílio Gas* programme) which were offered to low income families until the beginning of 2004. However, the mechanism of the system was unlikely to promote broad access since it required consumers to apply for their vouchers through the internet!

Governance

In terms of governance and the need to develop new institutional structures, the findings from the three countries produced some interesting findings. There seems to be low participation in associations despite the potential benefits in membership. In Brazil, there was considerable distrust in Plataforma (at least amongst the focus group members) over the residents association which was criticised for poor communication, including disseminating information about important services, such as the government's energy programmes targeting low income groups.

Lack of awareness of organisations is an obvious reason for low participation in organisations. Only 14% of respondents in Manila were aware of the Department of Energy's Energy Conservation Committee which is specifically designated for helping with energy problems. Very few (17 respondents) even belong to cooperatives that could strengthen their bargaining power over access to electricity[6]**.** Other reasons cited for low participation include time

[4] Women's focus group discussion.
[5] Focus group discussion.
[6] In the Philippines, electricity cooperatives are usually established by electric power distributors and

constraints and fear of additional expenses. People became members of community organisations for friendship and solidarity rather than for direct access to services.

However, in Nigeria the opposite situation exists, where religious organisations play a very important role in community life providing access to many services including energy, for example, securing an electrical connection. 11 households reported obtaining an electrical connection through a Christian organisation and eight through a Muslim organisation compared to four through a business association.

4.3 *Discussion: Is the institutional setting working?*

There continues to be lack of competition in electricity supply in all three countries which is considered to be a factor in price increases as utilities try to balance their books. This is in agreement with other researchers (Scott, McKemy and Batchelor, 2005; Ugatz, 2002)). Only using the price mechanism as part of demand side management is not benefiting low income households. A World Bank publication was in also of the opinion that not enough was being done to ensure the poor benefit from energy sector reforms (Brook and John Besant-Jones, 2000).

Much is made about illegal connections. However, utilities do not seem to try to understand why households use this route which is dangerous (risking electrocution) and sometimes expensive. Many low income households are forced to use this route because of bureaucratic obstacles to registering or qualifying for energy services. Utilities are often reluctant to provide a service where there are doubts about the legal tenure of property and where the dwelling is not considered to be a permanent construction or is subject to eviction (Scott, McKemy and Batchelor, 2005). Urban dwellings are often multiple occupancy and utilities may only allow one meter per dwelling. Many low-income households fall into one or more of these categories.

Low income urban residents do seem to use their networks to take advantage of informal (sometimes illegal) energy service providers. The consequence can be getting a connection illegally or through a third party, often a ‘slum landlord or lady’ who has a legal connection and charges exorbitant rates to tenants for their supply and has a vested interest in keeping the illegal connection (Annecke and Endelli, 2006).

One should not rush to be judgemental on those taking the illegal route. Empirical evidence indicates that there is willingness to pay for a legal connection amongst those with illegal connections (Scott, McKemy and Batchelor, 2005). Safety from improved wiring is considered a strong motivator for the legal connection, as well as other factors such as convenience and social stigma. There are instances where non-payment of bills or illegal connections can be seen as signs of political protest by those unempowered citizens (i.e. the poor) such as in the Philippines who are not convinced of the official explanations for price increases. Wood (2005) cites similar findings from Georgia where electricity consumers feel that they are being asked to pay higher charges to cover the debts created by the non-payment of bills by state institutions and enterprises and as a consequence resort to destroying meters. There is an “urban myth” that low-income consumers have a resistance to billing. In certain circumstances this may well be correct, for example, South Africa, where bill boycotts have long been part of a political struggle against repression (Scott, McKemy and Batchelor, 2005). However, empirical evidence

whose members are mainly its electric subscribers or consumers.

shows that avoidance of payment is not desired by consumers, that there is a desire for accurate billing – consumers are willing to pay for what they use but not for what someone else has used (Scott, McKemy and Batchelor, 2005; Wood, 2005).

It is disappointing that utilities have not attempted to find ways of converting these illegal clients into legal ones and so boosting income rather than focusing on reducing looses, thereby creating a win-win situation for consumer and supplier. While reforms are allowing small or the informal sector ESCOs to become suppliers of petroleum products, the technological advances that allow for decentralised exploitation of renewable energy technologies (eg solar water heaters, solar home electricity and biogas digesters) seem not to have materialised to supply the urban poor.

It is still early days in the deregulation process but it is clear that the regulatory commissions need to find a balance between all parties and resist pressure from the more powerful groups at the expense of the low-income households. The regulator in the Philippines petroleum sector is an example of best practice in supporting low income consumers, while maintaining the credibility of the industry.

In terms of governance, the reasons cited for non-participation in organisations by respondents in the Philippines instructive: time constraints and fear of additional expenses. Participation in community organisations are for reasons of solidarity and friendship. Interestingly, this is somewhat at variance with the findings of a similar study in the Philippines which found that one-third of the 240 households surveyed had accessed cash through community credit schemes to pay for metered connections (Scott, McKemy and Batchelor, 2005) . In this context, the findings from Nigeria are enlightening where access to energy services is through faith based organisations. This raises the question of trust in members of an organisation. This can be assumed to be high in faith based organisations which was clearly lacking in the community organisation for one of the surveyed urban settlement in Brazil.

5 Good governance in the urban energy sector

Good governance can be seen as mechanism for ensuring that when multiple actors participate in an institution, that the powerful do not benefit at the expense of the weak. In the institution of the urban energy sector there are three main actors: the government (who creates the policy), the energy utility (who delivers the energy carrier) and the consumer (who wants access to the energy carrier). This paper is written from the perspective of ensuring that the poor urban consumer is not disadvantaged by the process of transformations in the energy sector. How then can the governance of the urban energy sector be organised in a way that the urban poor are able to influence policy and to ensure that the service provided is relevant to their needs?

One approach is for direct consumer participation in the sector governance. Different arguments are used to justify consumer participation: a strong practical argument is that participation promotes transparency (Wood, 2005) and political arguments that participation promotes accountability (Tandon, 2002 quoted in Ugaz, 2002:10) and participation as a democratic right (Nakhooda, Dixit, and Dubash, 2007). There is considerable discussion about the form that this participation should take (consultation, representation and influence) (see, for a comprehensive summary, Goetz and Gaventa, 2001). In order to be able to participate in a meaningful way the public has to have access to techno-economic or financial information. Utilities have been less than enthusiastic about embracing the consumer representational model and are able to argue that the highly complex and technical aspects of the energy sector do not

fit well with participation by non-specialists. However, there are examples where slum dweller organisations have become involved in urban infrastructure projects and demonstrated the capacity to engage with technical installations and negotiations (Wood, 2005). Perhaps consumer education can make for meaningful participation, although the provision of capacity building is. Without the appropriate knowledge "participation" runs the risk of becoming tokenism in which consumer representatives rubberstamp decisions and hence perpetuate the unequal power relationships that participation is meant to redress (Ugaz, 2002).

Certainly laws that provide for energy sector reform do allow for public participation but implementation is weak. In Indonesia, while the electricity law states that "the government is obligated to consider the thinking and opinions of the public" in electricity sector planning, the law does not anticipate how to include, accommodate, or respond to input from the public in practice (Nakhooda, Dixit, and Dubash, 2007: 26). Similarly in India, while the law allows for the representation of social-economically weaker groups, no such representatives appear to have been appointed. Public hearings can be mandated by the legislative frameworks however, there is little assistance offered for the stakeholder preparation that would make for meaningful interaction. Even when consultations are conducted and input collected effective mechanisms to incorporate input are not in place so there is little impact on the final decisions.

It is also a legitimate question to ask how much do consumers want to be involved in energy sector governance. The findings reported in Section 4 would suggest: not very much. In Brazil, around half of the survey respondents were unaware that the electricity utility had been privatised. In the Philippines, respondents were concerned about the time participation would involve taking them away from income generation. To address the concern about time, community based organisations (CBOs) can take on the representation role and act as intermediaries between the utility and the community. The intermediary role takes different forms: they help electricity companies and other stakeholders better understand each other; provide services to the urban poor such as explaining what the programs involve, to access special lines of credit, to fill out forms and obtain information. A particularly important task is obtaining deeds and legalizing dwellings which are intrinsic to obtaining a legal electricity connection (Wood, 2005). However, CBOs are heterogeneous and variable in quality. If their capacity is weak then their legitimacy is questioned which can undermine attempts to represent the voices of the low-income consumer. In Brazil and the Philippines, organisations which were meant to informing communities about targeted programmes were failing to deliver the necessary information to the intended beneficiaries and were met with distrust by urban consumers (see Section 4).

Another actor who has the capacity to represent the interests of the low-income consumer is the regulator. The balancing of consumer and investor interests is a recognised role of a regulator, although much of the initial focus by regulators has been to create certainty about investment rules and minimize the risk of political changes of heart. The social mandates of regulators are limited which leads to a lack of resources to address social considerations (Nakhooda, Dixit, and Dubash, 2007). Indeed, resources for training of new regulatory staff in how to balance stakeholder interests or building capacity of citizen groups for meaningful participation in the regulatory process, has not been a priority for energy ministries or a focus of donor assistance (Wood, 2005). Unfortunately, regulators generally lack information and expertise regarding the poor and their infrastructure needs (Ugatz, 2002). Even so, the energy sector regulator in the Philippines can be considered to operate in a pro-poor way, for example, by setting life-line tariffs.

The regulatory process itself also needs to be transparent and open to public scrutiny (the

arguments about public scrutiny are similar to, and part of, those related to good governance and utilities). Again regulators are found wanting in the way that they provide (or rather do not provide) information in a simple, low cost forms which undermines the legitimacy of the regulatory process.

Perhaps the status of governance in the energy sector is best summarised by Wood: *What is lacking, then, is not a desire on the part of the public to be involved, but the capacity of institutions to respond, except in an ad hoc way* (Wood, 2005: 23).

6 Conclusions

Energy sector reforms, at least in the electricity sector in Latin America, are considered to have delivered efficiency and productivity gains (Gabriele, 2004; Wood, 2005; Ugaz, 2002). To date these gains have not benefited the urban poor in terms of energy prices. There have been improvements in terms of access for petroleum products, aided by informal sector suppliers, but electricity access has in general not improved, indeed many low-income consumers have been disconnected. Although energy sector reform policies allow for the possibility for public participation in energy sector governance, the mechanisms for participation are not clearly defined. Participation either as consultation, representation or influence by the poor in energy sector governance can be considered to be lacking. There appear to be no attempts to support, including by donors, building the capacity of consumers, CBOs or regulators to ensure either direct or indirect (that is through an intermediary) participation by the poor in the governance of the energy sector. As a result, the poor continue to receive an inadequate service.

On the other hand, as Ugaz points out, not all the problems of access to energy services can be solved by a change from public to private ownership of utilities (Ugaz, 2002). Access is also determined by where the poor live, their legal status and their ability to pay.

7 References

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