



**BALANCING REGULATION AND INCENTIVES TO ENHANCE ENERGY
ACCESS TO THE POOR AND WOMEN IN PRIVATISING ENERGY
MARKETS**

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1. INTRODUCTION

The objective of this paper is to explore issues related to incentives and regulation in providing energy access to the poor and women. The market oriented reform that began in 1990s, promising the end of all problems of the sector, has by and large bypassed the poor. Many countries have initiated direct programmes to increase energy access to the poor, bringing many long buried issues (like mainstreaming stand-alone systems, reviving efficient cook stoves, gender equity and women's empowerment in the energy sector, increasing investment in household electrification etc.) back to the centre stage. While it is clear that incentives are critical to promote energy access to the poor, there is the realisation that clear policies and strong regulatory systems are essential to ensure the effective implementation of such programmes.

It is in this background that we are discussing the issue of energy services to the poor and women. Section 2 gives an overview of the issues of energy access and concludes by raising some questions on how to address them. Section 3 gives the policy and institutional framework. Though the specific details are from the Indian context, it helps to locate the poor, gender sensitive policy initiative in any developing country. Section 4 is on regulatory opportunities and challenges. It presents regulation as a new institution of governance with a potential to push the pro-poor, pro-women agenda. In the electricity sector, this potential exists where electricity access for the majority of the population is from grid and in areas where stand-alone systems operate. Thinking beyond regulation, the final section brings out a few recommendations towards democratisation of governance.

The authors have drawn upon their experience in public interest oriented policy analysis, advocacy, regulatory interventions and civil society capacity building largely in the context of the Indian electricity sector and to some extent in the context of the South Asian energy sector.

2. OVERVIEW OF ENERGY ACCESS FRAMEWORK

South Asian countries have many features in common in the context of energy access. Barring few exceptions, incidence of poverty is high. A majority of the population lives in villages, and agriculture is the main source of livelihood. Access to commercial energy services is low, especially in rural and tribal areas. Cooking is the

chief energy use and biomass collected in a non-commercial fashion is the chief energy source.

Figure 1 gives a framework for energy access. The categorisation in this framework is from a perspective of different energy sources. Non-commercial energy sources include firewood, dung cake, human power and animal power. Commercial energy reaches the consumer in the form of electricity or fuels. Grid electricity (largely generated from centralised, conventional sources and a small percentage from renewable sources) is part of a countrywide grid with a large infrastructure. Stand-alone electricity systems are not connected to this grid and generate electricity for local use, from conventional or renewable sources. Fuels include petroleum products like kerosene, diesel, petrol, LPG; charcoal; and renewable sources like biogas, or solar heat.

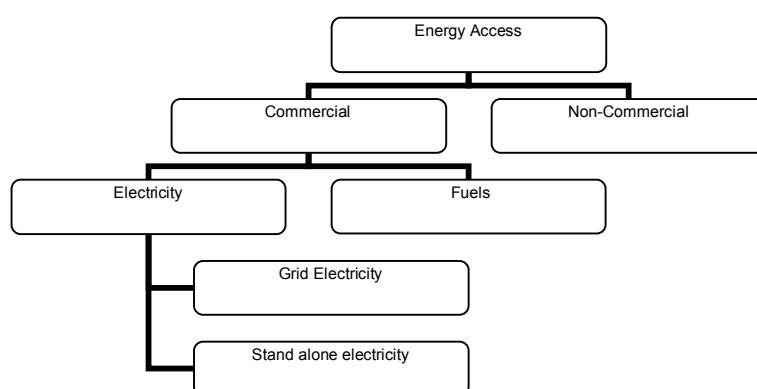


Figure 1: Energy Access Framework

Cooking energy is a critical issue for the poor and especially for women. Decreasing supply of cooking fuels, the time spent on collecting fuel, as well as cooking and health impacts due to pollution caused by inefficient burning of these fuels, are very serious issues mainly affecting women in the energy sector. These issues have been highlighted by many analysts [1-6]. Women spend about 5-6 hours every day on fuel gathering, fetching drinking water, and cooking. This implies losing out on opportunities for income earning. Nearly half a million people die in a year in India due to indoor air pollution, which is largely caused by inefficient burning of traditional fuels, and lack of proper ventilation. The current efficiency of cooking stoves is low at 8-10 percent and the penetration of efficient stoves (with efficiencies of 20-30 percent) has been low.

Energy sector projects and women's empowerment are crucial to poverty reduction efforts, sustainable development, and achievement of the Millennium Development Goals (MDGs). Efficient use of non-commercial energy and access to affordable, good quality commercial energy service are *necessary* conditions to meet all the MDGs, which include halving the extreme poverty, increasing gender equality and women's empowerment, and providing access to safe drinking water. These goals and targets do not have high priority in the market-oriented reform agenda, since its focus is on improving technical efficiency and commercial viability. Special incentives to encourage service providers to address these and regulatory mechanisms to ensure that they comply are essential.

This paper primarily addresses the issues related to the access of commercial energy services to the poor. Since the majority of the poor live in rural areas, there is higher attention to rural energy issues. Wherever relevant, the energy issues of poor women and the urban poor are discussed.

2.1 Commercial Energy: Needs and Sources in the Context of the Poor

Energy needs of the poor could be discussed under two categories – social needs and economic needs [7]. Social needs include cooking, lighting, space heating or cooling, entertainment, communication, other appliances and community services (drinking water, transport, health centre, education, library, street lighting etc.). Economic needs include agriculture (irrigation; implements like tractor, insecticide spraying, harvesting, winnowing, threshing; agriculture produce storage and transport) and small or medium enterprise (shops, cottage industry etc.). Table 1 outlines different aspects of energy services to the poor for social and economic needs. Gender considerations cut across these needs ranging from the critical importance of clean cooking energy for women, women’s role in water collection and management, increased and safer mobility related to improved transport and street lighting, to women’s role in agricultural activities such as harvesting, winnowing, threshing and transporting of agricultural produce to market, as well as women’s extensive involvement in the cottage industry.

	Social Needs	Economic Needs	Remarks
Examples	Household – cooking, lighting. Community – drinking water, transport, street lighting, health centre	Individual – agriculture implements, shops, cottage industry. Community – Lift irrigation, flour mills	
Energy quality	Low quality has long term impacts	Low quality has immediate impacts	Uniform regulatory norms essential
Energy quantity	Low amounts can make big difference, especially for the poor	High quantity required to make a difference	
End use efficiency	Subsidy essential. Implementation beneficial to service provider	Subsidy helps. Implementation beneficial to service provider	Incentives needed to kick start
Viability	Not financially viable to the service provider due to low density and low consumption	Not financially viable to the service provider due to spread and low tariffs. But is economically viable to society, if other conditions (markets, credits, etc.) exist	Timely state subsidy critical
Subsidy	Connection subsidy more important than operational.	Operational subsidy more important.	Regulation to ensure that it is targeted
Impact	Qualitative and long term (like literacy, health) – tough to quantify	Easier to quantify and more short term	

Meeting the economic needs has been the higher priority of the energy access programmes in many countries. Thus, the Indian rural electrification was driven by the need to energise agriculture pump-sets, leading to 82 percent village electrification (Source: CEA, March 2008) while only 44 percent of the rural households were

electrified. Centralised, conventional energy sources have dominated the energy supply programmes. Thus, coal, large hydro, nuclear and natural gas account for 92 percent of the Indian installed electricity generation capacity, whereas the contribution of renewable sources is 8 percent (Source: MoP, 2007).

There is wide disparity in the access to commercial energy between urban and rural households, poor and rich households, etc. as indicated in Table 2 for India.

Table 2: Access to Commercial Energy in India (% Households)			
Cooking			
<i>Type of household</i>	<i>Firewood</i>	<i>LPG</i>	<i>Other(*)</i>
Rural	75	5.5	19.5
Urban	22	57	21
Agriculture labour	84	NA	NA
Casual labour (urban)	58	NA	NA
Tribal	90	NA	NA
Lighting			
<i>Type of household</i>	<i>Kerosene</i>	<i>Electricity</i>	<i>Other</i>
Rural	44	55	1
Urban	8	92	0
*: Other for rural include: 10.5% dung cake, 3% kerosene; for urban: mostly kerosene Source: Prepared from Indian NSSO Round 61 data (2004-5) [8], ESMAP 2003 [2]			

Figures on energy sources for cooking indicate that rural households, households dependent on agricultural labour or casual labour (in case of urban areas), and tribal households depend largely on firewood for cooking. Penetration of Liquefied Petroleum Gas (LPG) is very low. Compared to this, the use of electricity for lighting is relatively high, even in rural areas.

2.2 Grid and Stand-alone Electricity to the Poor

Grid electricity caters to a large number of the poor in urban and rural India. In fact around 60 million households (of the total 200 million) consume less than 50 units of electricity per month². Grid electricity also powers around 13 million agriculture pump-sets at a subsidised tariff, directly benefiting as many households and indirectly benefiting many more. The target of the Government of India's massive rural electrification drive is to electrify all households in India by 2012.

However, the problems of electric supply, which begin with getting access to a legal electricity connection, do not end there. Rural households have to contend with long hours of load shedding, frequent breakdowns in supply, fluctuating voltages and often, high tariffs. Figure 2 gives a flowchart with issues of grid electricity access to the poor. As seen in the flowchart, access to electricity depends on many issues. Can the electricity lines be extended to provide connection? If consumers have no access to the grid, then electricity may be provided using stand-alone systems. If consumers do have access to the grid, then are the initial charges to get new connections reasonable? Can the poor easily work through various procedural barriers to get access to electricity? The second set of issues relates to the cost of electricity. Is electricity affordable? Do the poor get the subsidies meant for them? If the tariff is high, the poor will not be able to pay the bill and get disconnected. The third set of

² Approximate numbers estimated by Prayas from tariff orders and annual reports of different States

issues relates to the nature of electricity supply to the poor and the response of utilities to complaints by the poor. What is the frequency of electricity supply failures in urban slums and villages? Power shortages lead to load shedding in these areas first³. Poor quality of supply results in motor burnouts at pump-sets (sometimes 1-2 times a year), leading to large amounts spent on repairs. Is it easy for the poor to complain and follow up complaints on say, a wrong bill? If not, this is a serious cause for disconnection. All these issues are more serious in remote and tribal areas and we have observed habitations where 25 percent of the households have been disconnected from the grid due to billing problems. Even though half the Indian households are connected to the grid, maybe only about 25 percent get access to good quality power when they need it. Poor (men and women) get affected due to poor quality, but certain end uses like drinking water pumping impact women more. It is a big challenge to improve the situation.

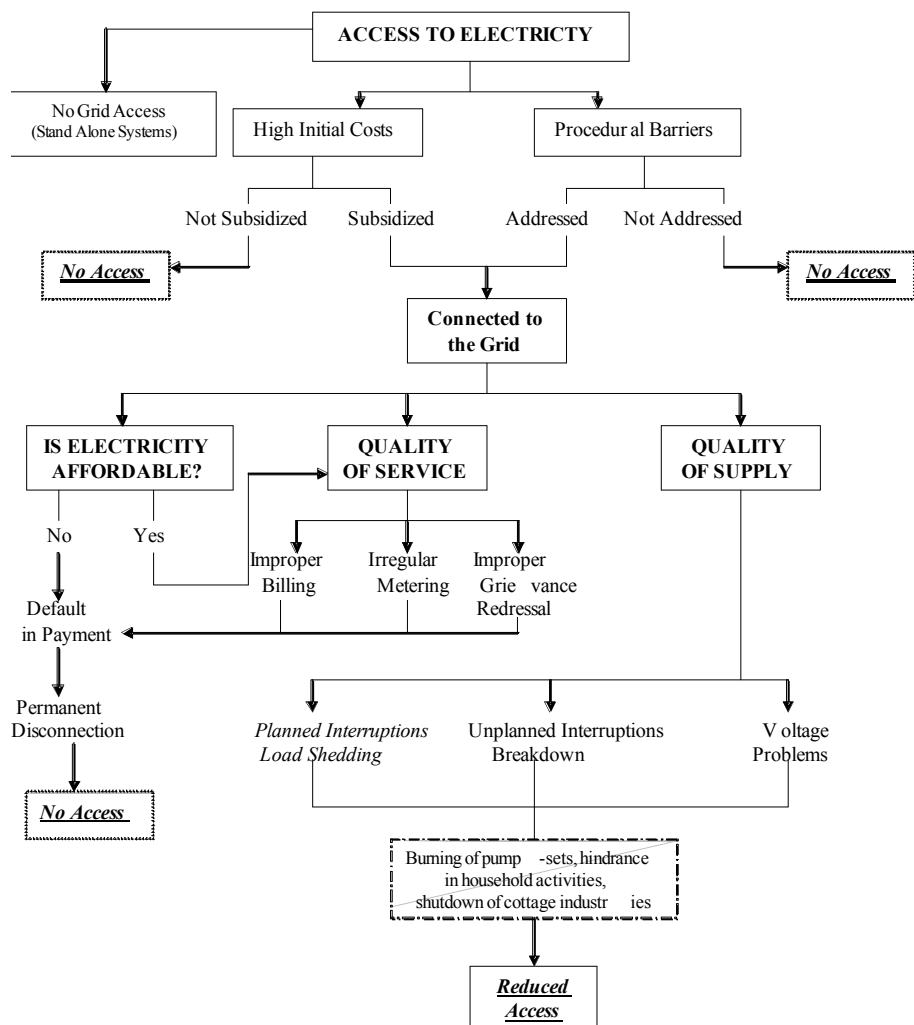


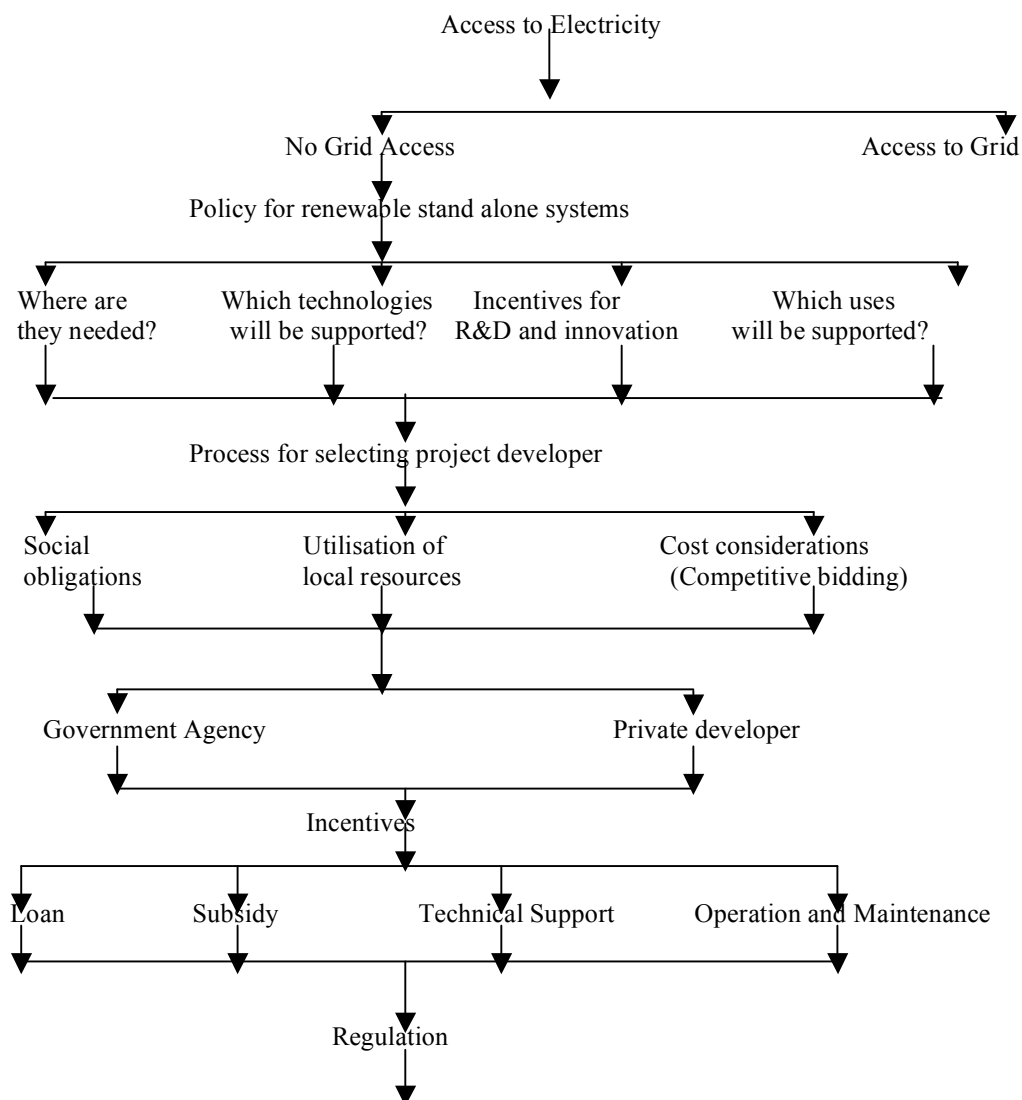
Figure 2: Flow chart of grid electricity access to the poor

Source: Awareness and Action for Better Electricity Service: An Agenda for the Community, Prayas, 2008

³ Almost all Indian States have power shortages and this leads to load shedding of a few hours per day. Typically this is only for 0-1 hour in the capital city, 2-3 hours in big cities, 5-6 hours in towns and 10-12 hours in villages. Kerala State is perhaps the only exception where load shedding is uniform of 30 minutes across cities, towns and villages

Stand-alone systems based on renewable energy sources supplying electricity in remote areas are being encouraged now. Grid-connected Distributed Decentralised Generation (based on renewable or conventional sources) is also being promoted in rural areas to supplement grid power. Although these are very promising, many aspects are ignored, leading to: i) high costs due to lack of standardisation and proper business models; ii) haphazard and ineffective implementation which can eventually discredit the option itself and iii) windfall profits for investors who may corner the subsidies and incentives without paying attention to energy service. Figure 3 illustrates some issues that should be addressed while planning and implementing stand-alone systems.

First and foremost, before rushing to implement such systems, a detailed analysis and a policy for the promotion of stand-alone systems based on renewable energy needs to be developed. The policy should cover aspects, such as where such systems are needed (where grid extension is not cost effective), which technologies should/can be promoted, which end uses should such projects support, etc. The process of selecting the project developer should be transparent and guidelines for such a selection should consist of a variety of aspects, some of which are covered in the flowchart. Roles of various institutions, as well as conditions for financial and technical support should



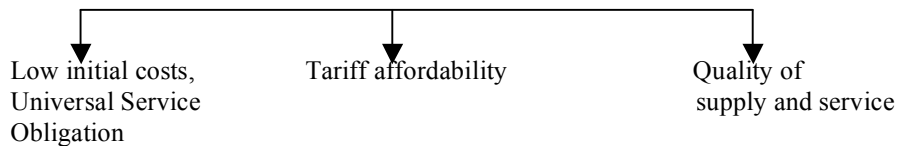


Figure 3: Issues with stand-alone systems

be very clear, an aspect which is unfortunately neglected in India. For example, the role of the Electricity regulator (State Electricity Regulatory Commission) and its jurisdiction in the case of stand-alone systems is not clear. As in the case of grid-based supply, can SERC (or any other similar agency) regulate aspects such as tariffs and investments, demand relevant quality of supply standards, or enforce universal supply obligations? All these questions should be answered before inviting private capital to invest in large numbers in stand alone renewable energy systems.

2.3 Why so many issues? Is there any way out?

As seen before, issues of energy access to the poor are many. The Indian poor spend nearly 14 percent of their income for cooking and lighting, compared to the national average of 10 percent [8], but they end up getting poor quality energy services. There are many limitations in the planning and implementation of energy programmes. Many programmes that have been designed to improve access to energy services, have been driven by the requirement of meeting the economic needs, while neglecting the social needs. The poor are looked at as passive (and grateful) receivers of energy services and are largely excluded from all aspects of the sector. Planning and implementation have been top-down without transparency or participation. Massive subsidies that were meant to make the energy services affordable have often been diverted, whereas little progress has been made on initiatives like the efficient cooking stove programme⁴, which is both poor- and gender-sensitive.

Marketisation and commercialisation of the energy sector is another aspect that affects the poor and women. Experience from many developing countries has been that electricity marketisation has neglected the poor. The GNESD study that covered 15 countries in 8 sub-regions noted that *“In most cases, market-led reforms with strong requirements regarding the financial health of electricity companies have been introduced into countries where a large sector of the potential “market” consists of very poor people...A reduced role for governments and no direct programme focused on increased access could not, from the outset, address the energy problems of the poor.”* Thus, few countries like China, South Africa, Philippines and Thailand reported progress in electricity access to the poor, whereas the situation worsened with reforms [10]. Reports indicate that in Orissa (the first state in India where the electricity reforms started in 1996), rural electrification was neglected, electrification rates of poor households reduced, and the consumption levels by this section of the population reduced. The experience is not very different in other Indian states. Reduction of state and cross-subsidies has resulted in an increase in tariffs for low-

⁴ It is estimated that nearly half of the subsidised (US\$ 2500 million/year) kerosene supply in India is diverted to adulterate diesel. Similar aberrations exist in the subsidised agriculture power supply: large subsidy cornered by big farmers (e.g. sugar cane farmers in Maharashtra); neglect of efficiency and over-exploitation of groundwater by farmers, since the tariff is very low; inflation of electricity consumption figures by distribution companies to hide losses and corner higher subsidy amount from government; neglect of the rural power system by the distribution companies, etc.

end consumers in all states [9]. Weak regulatory mechanisms failed to prevent gross inefficiencies in the sector⁵. Commercial viability was stressed at the cost of equity and environmental sustainability and thus, service delivery to the poor as well as energy efficiency have been neglected.

Some key issues have also emerged as a part of a better understanding of the challenges faced in integrating gender approaches into the energy sector. These include: (i) although energy provisions are gender neutral, energy sector organisations tend to be male dominated; (ii) where participatory methods are applied, like in some rural electric cooperatives, these are not gender inclusive; (iii) gender frameworks are not used for planning, implementation, monitoring and evaluation; (iv) there is little evidence of gender training in the energy sector and implementing agencies have limited capacity to deal with both the energy and the gender intersection; (v) focus on 'consumers ability to pay' for energy services marginalises the poorer segments, especially women; (vi) the rural population, especially women, lack the technical knowledge of modern, decentralised energy services; and (vii) the participation of women in energy project identification, design, financing, mobilisation, implementation, and evaluation has been very low.

Increase in fuel price reduces access of commercial energy, which has high adverse impact on women. While working to improve the situation, in the long run, it is also important to improve cooking with biomass in terms of improving efficiency, reducing pollution, etc.

The climate and fuel crisis are making matters worse. Increasing fuel costs have resulted in a rise in prices, or an increase in state subsidies (required to keep the prices low, as the Indian electricity and petroleum sectors are still dominated by state-owned corporations). The response by the corporations (private or state-owned) to the increase in costs is often to reduce the quality of energy services to the poor.

The climate and fuel crisis should have been an opportunity to push for energy efficiency and renewable energy. An Integrated Resource Planning approach in energy and transport sectors and a cross-sectoral approach in agriculture towards developing an economically and environmentally optimal paradigm is sorely missing. The current policy and planning paradigm is largely what Amulya KN Reddy had described [11] as '*GROSSCON (Growth Oriented Supply Sided Consumption directed) with its seven sins (unwise – consumption emphasis; unfair – bypasses the poor; unclear – non transparent; un-frugal – ignores efficiency improvement; unbalanced – has supply emphasis; uneconomic – has exorbitant capital requirements and finally unsustainable – has negative environmental impact)*'.

Is there a way out? How does one work towards developing gender- and poverty-sensitive energy policy as well as systems and institutions, which would implement such programmes? To use Prof. Reddy's words [12] to understand the objective: "... goal of rural energy systems is that they are instruments of sustainable rural development...It must increase the access of rural poor to affordable, reliable, safe

⁵ Examples from India are the Enron power project, which had a capital cost double the norm and many unfavourable contract conditions and the regulatory failure in the privatising upstream petroleum sector [16,19].

and high quality energy. It must strengthen their self reliance and empower them. It must improve the quality of their environment (starting from their homes) ”.

To discuss the possible way out, there is a need to understand the current policy and institutional framework. In the context of increasing marketisation and changing role of the state, it is also important to look at the opportunities and challenges of the emerging regulatory institutions.

3. POLICY AND INSTITUTIONAL FRAMEWORK

The Indian energy policy framework consists of policies and legislations at the central and state government levels, with the central ones having a larger role to play. The Integrated Energy Policy (2006) and the Eleventh Five Year Plan (2007-2012) prepared by the Planning Commission define the basic framework for the future of the energy sector in India. The Electricity Conservation Act (2001) and the Electricity Act (2003) along with the related policies (National Electricity Policy – 2005, National Tariff Policy – 2006, National Rural Electrification Policy – 2006) give the basic policy framework for electricity. The massive rural electrification programme (Rajiv Gandhi programme of electrifying 1.25 million villages and 80 million households by 2012), the Remote Village Electrification Programme (covering 10,000 remote villages through renewable energy by 2012), and the Distributed Generation Programme to supplement the grid in rural areas, are some key steps taken to ensure electrification of rural households in the country.

In terms of a pro-poor perspective, these policies present a mixed picture. The Integrated Energy Policy does talk of the importance of cooking energy, but by and large recommends an aggressive centralised conventional capacity addition plan to cater for the 8-10 percent economic growth. The Electricity Act provides a framework for marketisation and commercialisation of the sector. It suggests reduction of subsidies and facilitates open access and trading. On the positive side, it demands independent regulatory commissions and consumer grievance forums. It simplifies the procedure for stand-alone systems, promotes purchase from renewable sources, and encourages rural franchisees [13].

There are many institutions at the central and state levels managing the Indian energy sector. Central institutions include the Planning Commission, various ministries, the Bureau of Energy Efficiency, the Central Electricity Regulatory Commission and the Petroleum & Natural Gas Regulatory Board. At the state level, there are ministries, Renewable Energy Development Agencies, Regulatory Commissions, Distribution Companies, and District & Village level institutions. There are Indian and international private players, consultants, and funding agencies. There are few civil society analysts and consumer groups. The institutions, their role and linkages are shown in Figure 4.

Circles represent institutions and the lines represent influence, with dotted lines representing weak influence. The state is primarily responsible for policy. With marketisation, the state has given up its role of operation to corporations (state- or privately owned) and regulation to Independent Regulatory Institutions (IRIs). Utilities have high resources and a big role in energy service delivery. Sometimes the

service delivery function is transferred to franchisees and cooperatives (see box below). It can be seen that big consumers (businesses) have a strong influence on all institutions, whereas people have limited influence. Regulatory institutions provide a window to people to increase their sphere of influence, as will be further elaborated in section 4.

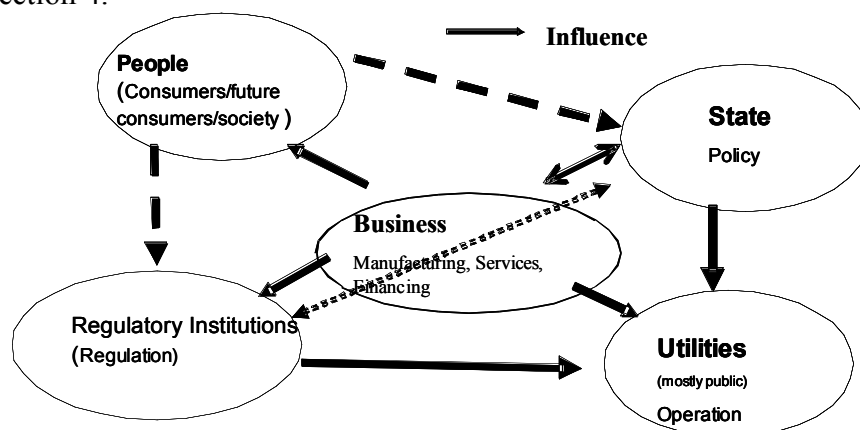


Figure 4: Institutions, roles and linkages

Box: Franchisees and rural cooperatives for electricity service delivery

The concept of franchisees (or contractors) of the existing licensed utility in the power sector is currently being promoted in India. The franchisees are expected to buy bulk power from the utility and distribute it in their franchise areas. They are also expected to carry out the operation and maintenance of equipment in their areas and are in charge of revenue collection. NGOs, Panchayats (local political institutions), and other local institutions are encouraged to shoulder this responsibility. In many states, franchisees have a minimum role of metering, billing and revenue collection from consumers. Regulations for the quality of supply and service are applicable to the franchisee as well.

This initiative might lead to improvement of the quality of both supply and service in the area largely depending on the terms of agreement between the franchisee and the distribution company. Due to ease of management of a smaller area, ease of obtaining capital for infrastructure investment, and incentives for efficient operation, many issues affecting the poor can potentially be addressed with a franchise arrangement.

However, there is also a risk of creating ‘power lords’ in the franchise areas, where a small group of people (and not an institution) controls the supply of power, collection of revenue, etc. An absence of direct regulatory oversight can also lead to imprudence of investments if the utility is not capable of ensuring accountability of the franchisee.

Checks and balances to protect the consumers, especially the poor, from exploitation should be the responsibility of both the utility and the regulator. For example, to make the process more democratic, it can be demanded that: i) contracts between franchisees and utilities are open for public scrutiny; ii) the utility ensures that revenues are accounted for and there is no conflict of interest while selecting the franchisee; and iii) the community has the right to seek a review of the contract/service quality, etc.

There are already around 4000 rural franchisees functioning in 27 states in India. There have also been experiments of urban franchisees in some areas. However, the actual impact/effectiveness of these new institutions/players is yet to be evaluated.

Rural Electricity Cooperatives have been operational in India for many years. They get subsidised supply from the distribution companies and cater to many villages. Few well-managed ones (with regular elections, etc.) provide a higher quality of service than the distribution company.

4. REGULATORY INSTITUTIONS: OPPORTUNITIES AND CHALLENGES

4.1 Brief Overview

Regulation has been by and large a function of the state in India, like in many countries in the subcontinent, until the 1990s. With the advent of liberalisation – privatisation – globalisation, there have been policy, structural and ownership changes in many sectors. Independent Regulatory Institutions (IRIs) and incentives for the entry of private players were introduced. The energy sector was one of the first sectors to experience changes, especially in India.

Figure 1 gave the framework for energy access. The non-commercial sector is largely unregulated. The commercial sector has a variety of regulatory institutions. Since the late 1990s grid-supplied electricity is regulated through independent regulatory commissions in India. Stand-alone electricity systems have some loose regulatory norms framed by the government, but it is unclear as to the actual jurisdiction of various agencies (regulatory commissions, energy development agencies etc.) to enforce these regulations. Regulators have also been introduced in related sectors like petroleum (Petroleum & Natural Gas Regulatory Board at the central level for downstream regulation was set up in 2006) and water (few state level regulators set up in 2005 and more planned), and are planned for the coal sector. Many South Asian countries have independent regulators in the energy sector.

The legal powers of regulators typically include authority to set the tariff, approve investments and expenditure, audit utility accounts, seek data or summon utility officers, formulate and enforce service quality rules, and enforce fines. The regulator is also expected to regulate and apportion any supply shortfall– which in itself carries implications for social justice and scope for conflict. Independent regulation is a relatively new institution of governance in the Indian energy sector. The electricity regulators are expected to arrive at a balance in the context of (a) the profit motive of utilities, (b) protection of consumer interest, and (c) various other considerations such as efficiency, economy, and equity. Regulators are expected to act within the boundary of the policy formulated by the government, which, in turn is expected to reflect social, environmental, and economic considerations of the society.

4.2 Opportunities

In the era of direct government regulation, people were expected to have control over the affairs of the power sector through a chain of institutions - state legislature / parliament, power ministries, and the utilities which were under the control of these ministries. Direct participation in the sector by the public was very low; their influence on the sector extremely weak and decision making in the sector was non-transparent. The electoral process did serve as a crude instrument for articulating public preferences about policy, planning and creating accountability pressures, but this was quite limited, inadequate and had many aberrations.

What is today's scenario? The state has largely withdrawn from the regulatory function and limited itself to policy formulation; state institutions have been corporatised with overriding emphasis on commercial performance; private players have entered in a large way into operation of the sector; market mechanisms like

energy trading and energy exchange have been introduced; business interests are exerting pressures on institutions, quite often to further their self-interest (see Figure 4).

It is in this context, that strengthening the regulatory framework has become very important to promote public interest. It is clear that regulation cannot legitimately bypass political processes. Instead, the question that emerges is whether through attention to procedures and processes, regulation can be both a robust and efficient process for representation of interests. Since regulation as an institution of governance has high potential, there is the need to frame an agenda of their substantive purpose, which includes social policy, and re-orient them towards democratic governance through promoting transparency, accountability and participation [14,15].

There are many examples to illustrate the opportunities offered by regulation. These include public hearings on tariff and investment issues; discussion papers on policies, regulations or procedures; setting up advisory committees and consumer networks; regulations on quality of supply with benchmarks (and compensation to the consumer for not meeting the benchmarks); promotion of energy efficiency and support for renewable sources. Capable civil society groups have used the regulatory forum to bring out gross inefficiencies like high distribution losses, poor capacity planning and one-sided power purchase contracts⁶ and have also pushed the public interest agenda. See the box below for some examples.

Public interest through Regulation

A separate category of low tariffs for poor consumers who are below the poverty line (BPL tariff category) was introduced in many states. This arrangement was improved, based on submissions, to ensure that categorisation is done, based on average annual consumption and not just monthly figures.

The Madhya Pradesh Electricity Regulatory Commission fixed a slightly lesser 'fixed charge' in the tariff for rural consumers, as compared to urban consumers in the state. This decision was based on the rationale that rural consumers are at a disadvantage when it comes to reliable power supply, and therefore should be billed a lower amount of money.

Standards of performance of service providers have been prepared by all Regulatory Commissions. These include about 30-40 performance indicators (restoration of failed power supply, low voltage, getting a new connection, attending to a complaint on a wrong bill, etc.), with maximum time limits and compensation to be paid to the consumer if the complaint is not attended to within the time limit. Commissions have also laid out the structure for consumer grievance handling with Grievance Forum and Ombudsman, at arms length to the utility. This has the potential of making it costly to the utility to provide the poor with bad services.

Some Commissions have taken up consumer capacity building efforts through booklets, training programmes and meetings. Some have organised consumer satisfaction surveys to gauge the quality of supply. Some have set up the office of a consumer advocate.

A wide range of consumers benefit from electricity and the rich usually subsidise the poor through cross-subsidies. The state also often extends subsidies to reduce the tariff of the poor. There are cases of reverse subsidies (the poor subsidising the rich) and utilities inflating consumption by the poor (to hide its own inefficiencies or gain more resources). Regulatory forums have been used to expose both. In Maharashtra, the case of average billing (where poor consumers are billed based on assumed average consumption and not actual) showed how utilities were unduly taxing the poor. In case of the

⁶ Such inefficiencies have higher impact on the poor. For example, rich can install costly devices to overcome power cuts or bad quality electricity supply, whereas poor simply have to go without power.

Pune model (where expensive surplus captive power from industry was tapped to reduce load shedding – which benefits the big consumers more), interventions helped to ensure that the poor consumers are exempted from contributing to this arrangement. In many states, interventions helped to showcase that utilities were actually hiding their transmission and distribution losses by declaring these as agriculture consumption.

In the context of energy service to the poor, it is necessary to examine if the central and state level regulatory institutions can handle grassroots regulatory challenges. With the massive programmes to increase commercial energy access to the poor, the spread and number of consumers are going to increase. Distributed generation, stand-alone systems and rural franchisees will increase. There is a need to create and strengthen regulatory functions at district and village levels. They would be better equipped to ensure the progress of rural electrification drives, ensure targeting of subsidies, monitor quality of service, monitor quality of investment, etc.

4.3 Challenges

Independent regulation has many limitations and challenges. Shortage of resources, delays in appointments, lack of support from the political system, lack of respect by the service providers, high techno-legal focus (at the cost of socio-economic aspects) and domination by retired bureaucracy, which tends to continue the status-quo, are some examples. It could alienate and prevent people from influencing critical decisions, by keeping decision-making process within a technocratic and legalistic regime.

Regulatory institutions have relatively fewer resources compared to the service providers they regulate. It is clear that without proper policy and political support, they cannot make much head-way. In order to overcome the challenges, it should take a proactive approach and enlist the support of the consumers to further public interest. Lack of capable civil society groups to take up public interest interventions in the regulatory space is often a big challenge⁷. Quality of service will not be ensured simply by making quality regulations and depending on reports of the service providers for compliance. Independent validation of such reports should be carried out, which could include area-wise and consumer-wise analysis. Awareness about such provisions is very low, especially among poor consumers and utilities have not developed poor-friendly complaint handling systems. Awareness campaigns, independent assessments of the quality of the service, and surveys on consumer satisfaction levels are needed.

The challenges before local level regulation are many. The community should be willing to take ownership of regulation under a democratic environment. The local governance institutions are often burdened with too many operational and regulatory responsibilities (water, forest, common land, etc.) without providing matching resources. Commercial energy systems like electricity are technically quite complex to manage. Utility engineers ignore the importance of community involvement and look at rural electrification as a technical matter of laying lines to passive consumers.

⁷ In many cases public participation in tariff public hearings has been low. Even when there is participation, it is mostly by groups representing individual interests of big consumers. Representation of the issues of the poor has been there only in few States like Maharashtra, Andhra Pradesh and Karnataka, due to active civil society groups.

Experience from many countries indicates that rural energy programmes have a lot to gain from community involvement; they will definitely suffer because of its absence [6]. Local community has to be equipped with required operational skills and should have easy access to expert skills in case of major problems. Provision of government subsidies for energy access to the poor often leads to undue interference by political powers for furthering their short-term interests. Proper planning, transparency in subsidy disbursement and ring fencing of funds may address the issue.

A key challenge related to gender equitable energy access is incentives for women entrepreneurs. Women's enterprises are generally home-based and/or in the 'informal' sector and thus pose challenges for the formulation and enforcement of regulations to better service this sector and improve the profitability of women's enterprises. Better servicing of women entrepreneurs' needs through the targeting of incentives to enhance women entrepreneurs' energy access include tax benefits, public funding, energy equipment rebates, micro-credit and SME financing, all of which can contribute to improving the profitability of women's enterprises.

4.4 Discussion Points

Regulation does offer a high potential to expose and prevent gross technical inefficiencies in the sector. It can also contribute to better field implementation of pro-poor energy programmes. The prerequisite for both is the public pressure from empowered communities.

Regulation may have been introduced in Asian countries to facilitate marketisation and privatisation of the sector. The initial estimates of high speed privatisation have proven wrong. For example, 90 percent of the electricity generation and distribution system in India is still state-owned. The effectiveness of regulatory institutions to regulate a largely state-owned sector is a point of discussion.

Since market oriented reform has come to stay, it is a safer bet to have some kind of regulatory mechanism. State governments are losing credibility to regulate and do not seem to have the competence to negotiate public interest with the variety of private and international players. Many studies and examples like Enron, the Orissa privatisation, the Indian Gas exploration and pricing, the California power crisis, and the recent financial crisis show the importance of setting up strong regulatory institutions before leaving some functions to the market [16,17,18,19].

However, to address issues of the poor, it is also necessary to understand regulation at a broader level than just independent regulation of the energy sector. Community regulation or social regulation has a strong role to play in improving services to the poor and space should be made for it in the larger institutional framework of the sector. Social regulation has been historically practised in managing community resources like forest, common land, fisheries and water. Contemporary examples include: i) The Akshay Prakash initiative, where community regulation helped to reduce the electricity demand in a few thousand villages in Maharashtra (see boxes below on Akshay Prakash Yojana and women's empowerment); ii) Ground water regulation experiments (examples from villages in Andhra Pradesh, where farmers have decided to stop digging new bore wells; to share neighbouring wells; to introduce efficient irrigation methods, promote water efficient cultivation methods

like SRI, and to introduce efficiency measures for pump-sets); iii) sustainable agriculture initiatives (water regulation plus making the village chemical free); and iv) A social audit for poverty evaluation programmes like the National Rural Employment Guarantee (NREGA) scheme, etc⁸. There is need to discuss what is required to upscale and sustain such initiatives. Perhaps there have to be factors to catalyse and sustain homogeneity in the community (if at all possible); perceived, quick, sustained economic benefits to all participants for a few years; financial and technical support at the early stages and absence of destabilising interventions from the state or any other agency.

The use of 'Right To Information Act' by civil society and the role of Information Commissions in India in recent years is another case of an alternate route to improving governance.

Legal empowerment, i.e. the ability of the poor, women and disadvantaged groups to use legal and administrative processes and structures to access energy services and opportunities, can promote good governance, advance rights and contribute to poverty reduction through the energy sector.

Akshay Prakash Yojana

Akshay Prakash Yojana implemented in Maharashtra (2006) attempted to regulate power use through consumer-utility partnerships. The scheme included initiatives toward taking collective responsibility for tackling load shedding problems in the villages.

Villagers were asked to regulate electricity use during peak hours, using it only for residential lighting during these times; thus electricity used for agricultural pumps, flour mills, lights required in schools etc. was scheduled for use only during the necessary hours. Theft was also checked and people were asked to give up appliances consuming extremely high amounts of electricity, e.g. hot plates, heaters, etc. The demand in these villages dropped, sometimes by as much as 50-70 percent. In return they were given 22 hours of assured electric supply in a day.

This scheme had been implemented in 4,611 villages and according to official figures, had reduced the peak demand by 960 MW.

Unfortunately, this scheme had to be discontinued. Official reasons given for this were extreme shortage which made it difficult to supply electricity for 22 hours to the Akshay Prakash villages, and lower benefits than expected from the scheme.

Women's empowerment through participation benefits the community: The Char Montaz Women's Cooperative (Bangladesh)

Char Montaz is where 33 women have become energy entrepreneurs through a project funded by the World Bank Energy Sector Management Programme. The cooperative was organised in 1999 and lamps and charge controllers are assembled and sold by a women's micro-enterprise. Lamps are now replacing traditional kerosene lamps used in homes, fishing boats, shops and mosques. The long-term potential is promising with a market of 20,000 households in an area where grid extension within the next 20 years is highly unlikely.

The lamp business represents an important opportunity for the women to earn a relatively good wage. If a woman constructs and sells two lamps a day she earns the wages equivalent to a skilled labourer, thus benefiting her family and improving her social status. The remote community also benefits from the lamps, which are efficient and have low energy consumption. The advantage over kerosene lamps is the reduced risk of fire, as well as a reduction in smoke and other emissions harmful to people's health.

⁸ Thanks to CV Ramamohan (Natural Resource Management Program, Centre for World Solidarity, Hyderabad) and others for inputs on social regulation in other sectors.

A key finding is that if men dominate the traditional energy sector, the niche created by new energy technologies (in this case battery charged fluorescent lamps) can provide women the opportunity to leverage themselves within the sector, which is what this project aimed to do. Women's increased income generating activities impacted on gender relations in the home and in the community. Some husbands started to share the housework. The Imams in the community, who were initially reluctant to have women work outside the home, became more supportive as the benefits provided by the women's cooperative included improved lighting in the mosques, public spaces, shops and in houses. Women's participation in community affairs was enhanced. Due to improved lighting children had increased reading hours to do their homework, income generation activities increased amongst shop owners and household producers.

The project recognised the importance of rural women's knowledge about local conditions, which played a major role in the design of the energy service mechanisms. Recognising that women had gaps in their knowledge of electronic components, and a lack of skills with the tools needed to work with the components, the project gave appropriate training to ensure that reliable lamps were produced. Training was also given in accounting and bookkeeping.

Source: Integrating Gender in Energy Provision: A Case Study of Bangladesh, UNDP & World Bank Energy Sector Management Assistance Program, 2004

5. RECOMMENDATIONS

Previous sections have covered the energy access issues of the poor and women and explored the spaces available in the policy and regulatory framework to address them, especially in electricity. The key role of civil society actors capable of promoting public interest has been highlighted. Along with the strategic use of available spaces, as the situation evolves, it should also be possible to push for creating more such spaces. As mentioned in Section 4, regulation (at different levels, for different kinds of energy services) has an important role to play in this in terms of improving governance, irrespective of ownership. But a comprehensive approach towards evolving pro-poor policies, planning and regulation, leading to democratisation of governance (and thus a sustainable solution to the energy sector issues) would have more components [20].

5.1 Gender

Gender aspects cut across all three arenas – policy formulation, planning and regulation and gender inclusive participatory approaches are essential to the democratisation of governance in the energy sector. The actual *process* of policy development and implementation needs to be gender-sensitive and aware. In a male dominated energy sector bureaucracy, engagement with women's organisations and networks promoting gender equity could help influence energy policy. A shift towards a demand-side approach, which looks at energy as an aspect of the social and cultural setting, rather than the traditional supply-side approach which focuses primarily on technology solutions, would contribute to better addressing gender energy needs. The collection and use of sex-disaggregated data, raising awareness of women's energy needs through the sector and context-specific and targeted training programmes in the energy sector, are all essential elements in gender-integrated policy formulation. Technical training for women in energy technologies, marketing and business practices, improved access of women to energy-sector related information (such as laws and regulations), and utilising the management skills of women in programmes are also key elements in increasing women's participation and influence in energy sector governance.

5.2 Policy Formulation

There should be transparency and broad consultations about major policies and initiatives. This can ensure that undue influence is not exerted by a few actors. Effective legislative oversight can ensure that socio-political aspects sensitise the techno-economic solutions.⁹ Public inputs into policy should be streamlined and encouraged. Participation should not just be a token and special efforts must be made to include poverty- and gender-sensitive inputs. Provisions for transparency should be comprehensive and should create ‘understandable’ disclosures.

Promoting pro-poor energy policy is a political act and will succeed only if the other pro-poor actors are made part of this effort. Political systems without a determination to mitigate overall inequity and a longer view of development are not likely to succeed in establishing equal access to energy services [6].

5.3 Planning

The planning paradigm should shift from top-down to participative. The Integrated Resource Planning approach should be made mandatory, as it looks at energy service needs (not considering only supply as an end or demand as a given), gives equal emphasis to all supply options (with due considerations for environmental/social impacts), and promotes end use efficiency. There should be mechanisms to ensure that the interests of the poor and women are represented.

Environmental Impact Assessment should be made more participative and transparent, and should be conducted well before the start of a project. Regional assessments should be planned and not just project assessments.

Energy is only a necessary condition for development and therefore energy planners should not be energy fundamentalists. There should be a cross-sectoral approach to planning with a clear focus on strengthening institutions. For example: energy plans for promoting rural economic activity will not meet its stated objectives if it is not linked to credit and the market, or if procedures and institutions to target subsidies are not strengthened. Community participation should not be limited to technical operational aspects, but should also encompass the rationale and priorities of the initiative [21].

5.4 Regulation

Regulation could be seen as a new institution of governance with the potential to democratise governance. Regulation should be developed at national, state and local levels to ensure transparency in operation, accountability of the service provider, and participation by all sections. Required resources and political support should be provided by the government to the regulators.

Special efforts should be made to increase the participation of those representing the interests of the poor. To ensure informed participation, there should be special efforts

⁹ For example, arrive at a strategic approach to address issues like a) the equity issue in energy access – where enhancing access may initially increase in-equity (gender and economic); b) the choice of energy use – balance between social and economic use

to build the capacity of community groups, including women's organisations, to engage with the sector. At the operational level, skills should be provided to manage the system and pursue individual grievances. At the regulation and policy levels, community leaders should be empowered to expose gross technical inefficiencies and suggest process improvements. The use of the local language, avoiding jargon, focussing on the impact rather than detailing the process (for example: if distribution loss is reduced by this much, tariff would reduce this much) etc. are important. There has to be demystification to the extent of the community being able to ask the right questions, if not giving comprehensive solutions.

Regulation is a window of opportunity to improve energy service delivery to the poor - directly through pushing for better implementation of policies and programmes and indirectly through channelling the inputs to improve the policies and processes.

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