Consequences of Energy Policies for the Urban Poor

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Introduction

Poor urban households in developing countries spend a significant proportion of their limited cash incomes - often as much as 15 to 22% - on energy, and much of their remaining income is spent on basic goods such as food and housing. Attempts to make energy services more accessible and affordable to the urban poor by targeting subsidies for certain fuels have largely failed, resulting in restricted access by the poor and diversion of subsidies to other economic groups. Furthermore, the benefits of taxing modern fuels to conserve energy, raise government revenues, and lower foreign exchange expenditures are often offset by the indirect harm that they cause the urban poor. Developing countries need not abandon efforts to assist the urban poor through energy policies. The results of a recent global survey of 45 cities and more than 20,000 households (Barnes and others 1994), along with several other World Bank studies (Gutierrez 1995a, b and c), confirm that the urban poor are better served by pricing energy along commercial lines and facilitating access to fuels. Energy that is neither heavily subsidized nor heavily taxed, and that is free of import restrictions, has the best chance of reaching the urban poor. Such policies help households that can afford LPG, kerosene, and other modern fuels; they also help the poor by keeping the prices of traditional fuels, used mainly by the poor, at affordable levels.

The Poor Spend Proportionally More on Energy

Most people in urban areas must pay for the energy they consume. Even the poorest households usually pay for traditional cooking fuels, such as fuelwood or charcoal. Figure 1 shows that the poorest 20% of households pay a higher proportion of their incomes than wealthier households for lower-quality fuels.
For the poorest 20% of households, the average monthly income ranges from US$7 to 11 per person, and 15 to 22% of this small income is spent on energy. Policies that lead to higher energy prices are therefore regressive and can cause significant hardship for poor urban households.

**Figure 1: Energy Expenditures as a Share of Income**
*Average Income Deciles for 45 Cities in 12 Countries*

![Figure 1: Energy Expenditures as a Share of Income](image)

**Source:** Barnes and others (1994)

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**The Poor Pay More for Useful Energy**

The poor often pay higher prices for energy than more wealthy households. This is partly the result of both the heat content of the fuels used and the conversion efficiencies of the technologies used to produce what is called useful energy. Appliances fueled by wood, charcoal, and kerosene are often very inefficient. Conversely, appliances designed for LPG or electricity, purchased mainly by wealthier households, use energy more efficiently.

**Cooking**

For traditional wood-burning stoves, only 10 to 15% of the energy released by burning wood is useful energy; the rest escapes around the pan. By contrast, about 50 to 65% of the energy from LPG is useful. The urban poor in 6 of the 12 countries recently surveyed pay a higher price for useful cooking energy than wealthier households (Barnes and others 1994). In the Philippines, where energy prices generally reflect economic costs, the urban poor pay US$1.79 per kilogram of oil equivalent (KgOE) for their cooking needs, whereas the rich pay only US$0.66 per KgOE, mainly because the poor use woodfuels and the rich LPG. The reasons the poor often do not take advantage of the lower prices for useful energy
offered by LPG involve limited access to LPG, user-access fees, and the significant costs of LPG stoves and bottles.

**Lighting**

The price of lighting is higher for the poor than for higher-income households that use electricity rather than inefficient kerosene lamps. Even on conservative assumptions, the energy efficiency of an electric incandescent bulb is 10 to 15 times more efficient than a kerosene lamp, and a fluorescent tube is 35 to 40 times more efficient. In Cape Verde, for example, the poorest households pay about US$1.40 per kilolumen hour, compared with US$0.85 paid by the highest income groups (Barnes and others 1994). In Thailand, however, the urban poor pay less than wealthier households for lighting services because of the country’s near-universal electricity service and a policy that encourages "lifeline rates" for the poor. Limited access to electricity is thus the key reason the poor pay higher prices for lighting.

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**Policies Have Been Ineffective**

Many government initiatives aimed either at helping the poor or at raising revenue from more wealthy households without hurting the poor have been ineffective and costly, even though well-intentioned.

**General Subsidies Benefit Others More**

When fuels are widely available in an open market, general subsidies for commercial fuels such as LPG, kerosene, or coal can extend their use by poor households and depress prices for traditional fuels. In Indonesia, for example, where kerosene is subsidized, or in China, where coal is subsidized, most people use these fuels, and the proportion of income spent on energy is relatively low. However, the lack of restriction on who may purchase subsidized energy products creates a free-rider effect. Middle-class and better-off households reap a disproportionate share of the benefits because they can afford to use much more energy than poorer households.

**Targeted Subsidies Fail To Reach Poor**

To overcome the problems associated with general subsidies, many countries have tried unsuccessfully to target subsidies at household fuels used by the poor, usually LPG and kerosene. Although such policies sound attractive, they often only marginally help the poor. For example, until several years ago, the government of Ecuador subsidized kerosene, a fuel used predominantly by the poor. However, poor households received only limited amounts of kerosene because retailers diverted the bulk of supply to the more profitable transport sector.

**Taxing the Rich Often Hurts the Poor**
In wood-scarce urban areas, where liquid-fuel prices provide a price cap to traditional fuels, a tax on LPG or kerosene can lead to higher woodfuel prices. Wood and charcoal prices are very high, for example, in Burkina Faso, Mauritania, and Haiti, where petroleum products are taxed. Figure 2 shows that in Haiti, as wood resources have disappeared, the price of charcoal has increased relative to that of alternative commercial fuels. Since the price of useful energy from charcoal will stay fairly level with the price of alternative fuels (above this level people would switch to the other fuel), the high taxes on imported fuels translate into higher prices for traditional cooking fuels. There have been similar findings in other countries (Gutierrez 1995a, b and c).

**Figure 2: Energy Prices in Haiti, 1970-90**
*(Current $ per gigajoule adjusted for end-use efficiency)*

![Energy Prices in Haiti, 1970-90](chart.png)

*Source: ESMAP (1991)*

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**Policy Recommendations**

Policymakers concerned with the equity implications of energy policy for urban areas should encourage economic cost-based energy pricing, promote a wider variety of choices for energy, and support policies to make modern appliances and services more affordable to the poor.

**Increase Availability of Liquid Fuels**

Liquid fuels should be taxed lightly and made widely available by, for example, allowing unrestricted imports. By maintaining energy prices at levels that cover costs and giving distributors and retailers incentives to serve consumers, it is more likely that a reliable market will develop that reaches poor urban households.

**Use Limited Lifeline Tariffs for Electricity**

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In the electricity sector, the urban poor can be well targeted by using modest cross-subsidies to support lifeline rates at low blocks of consumption – no more than 35 to 40 kWh per month would cover the basic lighting needs of urban consumers. This exception to the principle of pricing energy at its economic cost provides significant economic benefits for poor households (Peskin and Barnes 1994) and is well targeted since the urban poor consume so little electricity. In addition, this policy does not require cumbersome methods to ascertain who qualifies for the subsidies. In addition such subsidies cannot easily be diverted to other income groups.

Ease Cost Barriers to Energy Services and Appliances

The poor can be encouraged to use fuels more efficiently by removing cost and other access barriers to the use of improved stoves, electricity, kerosene, and LPG. Since the poor account for most new demand, they are helped by policies that reduce the up-front cash costs of new appliances (such as improved stoves or LPG bottles) or of obtaining new energy services (such as electricity or LPG). Such policies can be implemented through programs that provide innovative credit, offer simple, low-cost service connections for electricity and LPG, and spread connection costs over a long period.

Endnotes

The author is an Energy Planner, Industry and Energy Department (IEN).

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