

Electricity Sector Reforms and the Poor in Europe and Central Asia

Contrary to perceptions, the poor benefited more than the non-poor from reform

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The socialist legacy in Eastern Europe and Central Asia, where access to electricity had been extended to virtually all consumers at nominal cost, was an electricity sector dependent on a complicated system of fiscally unsustainable budget transfers, while simultaneously seeing dramatic deterioration of its infrastructure. In the worst affected countries, service was failing and electricity was unavailable for large parts of the day. The only option open in this situation was immediate implementation of a wide-reaching reform program. As with all utility reforms, policy makers were faced with the mismatch between the timing of costs and benefits associated with reform, exacerbated by expectations rooted in communist times that the state would take care of utility provision.

Three case studies below undertaken in Armenia, Georgia and Moldova analyze the reform patterns, the consequences for households, and the effectiveness of various mitigating strategies for the poor.

Raising Prices in Armenia — Burden for the Poor?

In the late 1980s and early 1990s, Armenia's economy suffered a catastrophic earthquake, the breakup of the Soviet Union, protracted conflict, and

the closure of borders with Azerbaijan and Turkey. The landlocked geographical position and dependency on imported oil and gas compounded the effects of rising energy prices. At the same time, residential electricity prices remained very low. Unable to cover internal maintenance costs and crippled by weekly interruptions in gas supply, by 1992 electricity utilities were on the verge of collapse. From 1992 to 1995, most of the population received only two to four hours of electricity per day. With district heating also gone, residents of the capital Yerevan burned trees, telephone poles, and books to get through the winter.

In 1995-1996 the Armenian government embarked on reforms, which included restructuring and regulating the energy sector, improving payment discipline, and making the electricity supply more reliable. Armenia soon made progress, and by 1999, 98% of households reported having electricity.

A tariff increase in 1999 was a pivotal moment in the reform. Introduction of a single uniform tariff removed subsidies and led to a sizable increase in electricity prices. To soften the impact of the increase, the poorest households were compensated with a direct cash payment.

After the increase, the poor consumed 20-30% less of each energy type, yet they devoted close to 30% of their

monthly expenditure to energy, compared with 18% for the non-poor (and with 3%-7% in western countries). The burden of tariff increases appeared to be highest among the urban poor, with 16% of their total monthly expenditures going to electricity alone.

In response to the price change poor households:

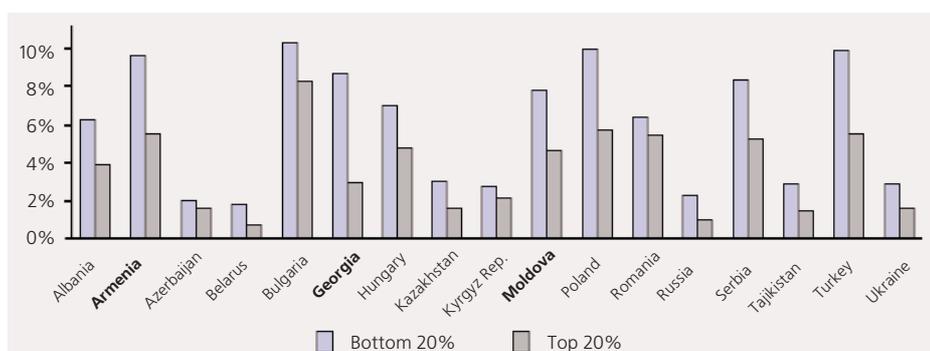
- Lowered consumption — by an average of 20%, especially among rural households, who apparently had greater access to substitutes;
- Paid only a fraction of the bill, maintaining service while accumulating arrears. The percentage of such households increased from 27% to 46% between 1998 and 1999;
- Substituted electricity in heating and cooking, with the effort highest among the rural poor (71%).

Despite reduced consumption by the poor, their average bills increased by 13%. Yet, only 55% of the poor households received cash transfers.

We conclude that the initial impact of reform was underestimated, as the tariff increase was in reality 50% greater than originally conceived. This highlights the need for careful calculation and accurate price response prediction in forecasting and mitigating the impact of reform. Although the tariff increase was aimed at creating a more sustainable sector, the utility revenue increase of about 6% was less than expected, thanks to falling consumption and a simultaneous increase in arrears. This suggests that the benefits of the reform program did not materialize as quickly or easily as intended, and that tariff increases must be accompanied by moves to encourage greater payment.

In years after the study was conducted, Armenia continued to reorganize the electricity sector, transforming it into one of the region's success stories. By 2004, collections had reached almost 100%. The social protection system has become better targeted, and efforts to improve it have continued further.

The Poor Spend More (Percent of Income on Electricity, 2002)



Notes: Conditional on households reporting positive expenditures. Figures for Bulgaria and Tajikistan are for 2003. Source: Author's calculations based on household survey data from World Bank ECA database.

Nonpayment and Power in Georgia

Georgia's economic decline following independence was among the deepest in the former Soviet Union, with GDP falling by 70% from 1990 to 1994. The country's dependency on energy imports and high international prices for fuel were exacerbated by supply and generation disruptions from political turmoil. Utilities accumulated large payment arrears, and energy supplies contracted dramatically. Households were receiving only four to six hours a day of electricity in the capital, Tbilisi, and three to four hours a day elsewhere. Investment in electricity infrastructure was impeded by a lack of capital, as a combination of subsidized tariffs, nonpayment of bills, and thefts of electricity contributed to low cost recovery.

Starting from 1996, the government of Georgia undertook a seemingly model program of utility sector reform. The vertically integrated incumbent was split into several generation enterprises and separate transmission and dispatch companies. Distribution was divided into regional companies. And in 1998, in the first privatization of its kind in the former Soviet Union, an American distribution company, AES Corporation, purchased Telasi, the Tbilisi power distribution company.

To increase collections, AES Telasi invested US\$60 million in installing electricity meters in Tbilisi and cutting off dangerous illegal connections. This helped the utility to increase receipts by 135% by 2002. While tariff increases accounted for some of the increase, better collections from customers and increases in the volume of government transfers to consumers also played a role. The quality of service also improved. In 2001, 94% of households in the capital received 24 hours of uninterrupted electricity.

Outside Tbilisi, energy consumption fell significantly after 1997, especially by the poorest 20% of households, who in 2001 consumed half as much as before. To mitigate the impact of rising prices on the poor, a range of programs had been adopted to provide energy transfers to households, including those of pensioners and refugees. However, our findings show that a significant share of transfers went to households in the high expenditure quintiles.

Despite successes, falling incomes and a prevailing practice of nonpayment

— with high theft levels, routine sabotage or destruction of meters, and protests against increasing collections — proved to be major obstacles to improving cost recovery for AES Telasi. Since changes in collection rates increased uniformly across the lowest and highest 20% of households, we conclude that free-riding rather than affordability was behind the arrears. Increasing collections did not necessarily hurt the poor.

In 2002, reform stalled. Dissatisfaction with higher tariffs and greater enforcement was expressed through resentment at the presence of a western player in the electricity sector. In late 2003, AES sold Telasi to Russian utility RAO UES.

Georgia's experience highlights the difficulties encountered by utilities in pushing for cost recovery in a hostile environment. The main lessons include:

- Remetering, in conjunction with tariff increases, should be a high priority, to generate the maximum amount of revenue;
- An aggressive approach to reducing nonpayment, such as in Georgia, does not necessarily have a disproportionate adverse impact on low-income households, particularly if suitable subsidy and transfer mechanisms are in place;
- An ambitious reform agenda cannot work without a strong regulator and a high-level political commitment, which were lacking in Georgia.

In later years such problems as continuing nonpayment, accumulated debts, theft, and possibly corruption remained, as evidenced in the 2005 World Bank report, and Georgia's energy sector remained financially bankrupt.

Privatization and the Poor in Moldova

Moldova's post-independence decline left it one of the poorest countries in the region. Moldova imports more than 95% of its energy from Russia and Ukraine. Increasing gas and oil prices contributed to the rapid accumulation of debts by the state energy company, Moldenergo. Until 1998, residential energy tariffs remained low, and sector revenues could not cover the cost of imports. This resulted in regular power interruptions and lower quality, especially outside the capital, Chisinau.

In 1997, Moldova launched a reform program, and in 1999 tariffs were increased by 84%, followed by smaller

increases. In 2000, the government adopted a law on energy compensation for vulnerable groups, and sold three of five regional electricity distribution companies to the Spanish utility Union Fenosa (two others remained in state hands).

Although reform produced substantial improvements in supply to consumers, particularly in rural areas, reform and privatization elicited acrimonious debate on their costs and benefits. The Communist government, elected in 2001, openly announced its intention to reverse privatization in the energy sector.

Did reform really affect the poor and the non-poor differently, as was charged by its opponents? Were household electricity consumption patterns different in private and public distribution networks? Our findings suggest that:

- On electricity consumption, the poor were catching up with the non-poor. On average, the poor consumed 26% less electricity than the non-poor. But since 2000, they were increasing monthly electricity consumption by 14.6%, while the non-poor were increasing consumption by only 3.2%.
- Availability of electricity greatly improved. The poor, disproportionately affected by blackouts, benefited the most from the return to a 24-hour service.
- Consumption and expenditure patterns of households served by Union Fenosa and those served by the public companies were found to be roughly similar, as was the quality of service.

Thus, contrary to perceptions, the poor benefited more than the non-poor from reform, having increased their consumption more than the non-poor despite rising costs. The private company had a significant positive impact on the government budget, while service quality improved, and collection rates have risen to almost 100%. Moreover, the presence of a private operator in a chronically underperforming sector may have had a significant positive spillover effect, putting pressure on the public utilities to improve their performance.

The article is based on the World Bank publication "People and Power: Electricity Sector Reforms and the Poor in Europe and Central Asia" by Julian A. Lampietti, Sudeshna Ghosh Banerjee, and Amelia Branczik. The volume brings together a series of studies conducted between 1999 and 2004. The full text of the volume is available at: www.worldbank.org/eca/publications. BT