CHAPTER 6

Creating an Enabling Environment for Investment

The total projected energy sector investment requirements for the region over the next 20–25 years are huge. They amount to about $3.3 trillion (in 2008 dollars), some 3 percent of accumulated GDP during that period (table 6.1).

Although the public sector will have to finance a portion of these investments, it will not have the capacity to meet the full investment needs. The countries in the region will therefore need to call on the financial depth and technical know-how of private sector investors and energy companies. Although the current financial crisis is a serious impediment to private sector investment in any activities or countries seen as high risk, as the financial crisis passes, the prospects for such investment will improve. However, in order to attract these investors, countries will need to create an enabling environment that provides secure ownership rights, is subject to the rule of law, fosters transparency, and enables reasonable risk mitigation. In addition, individual sectors will have to be viewed as financially and commercially viable. This will be particularly critical in those sectors, such as electricity and heat, that are largely dependent on their domestic markets.

TABLE 6.1

Total Projected Energy Sector Investment Needed in the Region by 2030–35, by Subsector

(billions of 2008 dollars)

Subsector	Investment required
Electricity	1,500
Crude oil	900
Heating	500
Gas	230
Coal	150
Refining	20
Total	3,300

Source: World Bank staff calculations.

Creating an Attractive Business Environment

In order to create an attractive environment for investment, countries will need to adhere to a number of key principles (7 "do's" and 3 "don'ts"), grouped here under 10 headings. Although these principles are not equally important, all have significant bearing on perceptions of the overall climate for investment. Government actions that are consistent with these principles will go a long way toward creating an attractive and competitive investment climate in the energy sector.

1. Do not impose a punitive or regressive tax regime. An underlying principle of effective taxation is that, to the greatest extent possible, the tax system should ensure that projects with pretax (or economic) rates of return should show positive post tax (or financial) rates of return as well. A tax system that produces this result is called "neutral." Full neutrality may be difficult to achieve, but it remains an important tax objective. The concept of progressive taxation, in which there is a positive correlation between government take and underlying project profitability, is a widely accepted approach, particularly in the petroleum sector (box 6.1). A regressive system of taxation, in which the government's percentage share of the economic rent increases as profitability declines, should be avoided.

2. Do introduce an acceptable legal framework. An acceptable legal framework protects the interests of both the state and investors (box 6.2). Its main purposes are to provide the basic context for and rules governing operations in the energy subsectors in the host country; regulate energy operations as they are carried out by both domestic and foreign enterprises; and define the principal administrative, economic, and fiscal guidelines for investment activity in the energy subsectors.

BOX 6.1

Components of an Effective Tax System for the Petroleum Sector

Tax payments may be made in cash or in kind (in-kind payments are common under production sharing arrangements). Regardless of the form of payment, certain characteristics are common to tax systems that achieve the dual objectives of offering competitive tax terms to investors and ensuring that the state receives an equitable share of the economic rent from its hydrocarbon resources. An acceptable tax package for oil production might include the following components:

- A reasonable royalty, which provides the state with an assured return for permitting the investor to exploit its hydrocarbon resources.
- A corporate profits tax with reasonable cost-recovery provisions. The tax rate should be the same as that applied to corporate profits generally.
- An additional profits tax tied to actual profitability, which can be used to capture "excess profits," thereby increasing government revenues without adversely affecting economically desirable investment decisions.

Reasonable business expenses should be deductible for tax purposes. The definition of such expenses should be applied consistently across the industry, in a fashion that reflects the true economic costs to the business.

BOX 6.2

A Legal Framework for the Petroleum Sector

The essential elements of a legal framework for the petroleum sector are a petroleum law, enabling regulations, and one of several variants of a model contract. Such a framework should provide both the host country and investors with a clear legal and contractual context within which to negotiate exploration and production arrangements that are mutually advantageous and will lead to development of the petroleum resources of the host state. The fiscal and tax aspects of a complete petroleum legislative framework can either be detailed in the petroleum law itself or set out in a companion petroleum revenue code, either of which could complete the legislative package.

3. Do provide supporting regulations, administered by an independent and impartial regulator. Regulations are an essential component of successful energy legislation. They should provide the detail and procedures needed to implement the policy and meet the objectives of the energy legislation.

Establishing policy is the responsibility of the government and the legislature. The role of the regulator is simply to administer the regulations arising from that policy. The regulator should, therefore, be independent of the policy-making process.

Regulation of the power sector varies across countries in the region (table 6.2). Countries that are EU members or have EU aspirations generally show the most progress.

TABLE 6.2

Status of Regulatory Institutions in the Region by November 2008, by Country

		Separate regulator	Fixed-term appointment	Industry funding	Full tariff setting power	Transparency	Right to appeal
South East Europe	Albania	✓	✓	✓	✓	✓	✓
	Bosnia & Herzegovina	✓	✓	✓	✓	✓	✓
	Croatia	✓	✓	✓	✗	✓	✓
	FYR Macedonia	✓	✓	✓	✓	✓	✓
	Montenegro	✓	✓	✓	✗	✓	✓
	Serbia	✓	✓	✓	✗	✗	✓
EU Countries	Bulgaria	✓	✓	✓	✗	✓	✓
	Czech Republic	✓	✓	✗	✗	✓	✓
	Estonia	✓	✗	✗	✓	✓	✓
	Hungary	✓	✓	✓	✗	✓	✓
	Latvia	✓	✓	✓	✓	✓	✗
	Lithuania	✓	✓	✗	✓	✓	✓
	Poland	✓	✓	✗	✓	✗	✓
	Romania	✓	✓	✓	✓	✓	✓
	Slovak Republic	✓	✓	✗	✓	✓	✗
	Slovenia	✓	✓	✓	✓	✓	✗
Black Sea & Belarus	Armenia	✓	✗	✗	✓	✓	✗
	Belarus	✗	✗	✗	✗	✗	✗
	Georgia	✓	✓	✓	✓	✓	✓
	Moldova	✓	✓	✓	✓	✓	✓
	Ukraine	✓	✓	✗	✓	✓	✗
	Turkey	✓	✓	✓	✓	✓	✗
Caspian & Central Asia	Azerbaijan	✓	✗	✗	✗	✗	✓
	Kazakhstan	✓	✗	✗	✓	✓	✓
	Kyrgyz Republic	✓	✓	✗	✓	✗	✓
	Tajikistan	✗	✗	✗	✗	✗	✗
	Uzbekistan	✓					
	Turkmenistan	✗	✗	✗	✗	✗	✗

Source: Bank staff based on ERRA 2008.

4. Do create an environment that facilitates assured nondiscriminatory access to markets. Creating such an environment involves providing access to both domestic and international markets (if applicable), providing access to existing transportation facilities (on a non-discriminatory basis), and making it possible for investors to establish new transportation options. In host countries in which transportation options are limited, perceptions concerning access to markets play a very significant role in risk assessment by potential investors.

5. Do not interfere with the functioning of the marketplace. Examples of interference with the functioning of the marketplace include state orders related to the delivery of crude oil and refined products, pricing controls, and restrictions on the import and export of energy products.

6. Do not discriminate among investors. Not only should host countries avoid discrimination among investors, they should avoid even the perception of such discrimination. Measures to avoid discrimination include the following:

- Pursuing open and transparent processes for the award of licenses, contracts, and concessions
- Enacting legislation to preclude discrimination (and providing the full support of the judicial system to enforce this legislation)
- Ensuring that the laws and regulations affecting the sector are consistently applied.

One additional factor that can come into play is differences between practices in a particular host country and normal international practice and the way the government addresses those differences. If, for example, certain investors are able to get away with such actions as ignoring internationally accepted environmental and safety standards, not paying taxes, and bribing officials, the effect will be a climate that discriminates against the investor that fully complies with internationally accepted standards.

7. Do honor internationally accepted standards. Examples of internationally accepted standards that should be honored include using international accounting standards, allowing investors to have recourse to international arbitration, and honoring the provisions of international treaties.

8. Do abide by contractual undertakings, and preclude the use of an administrative bureaucracy to constrain investor activities. Abiding by contractual undertakings requires governments to introduce "grandfathering" provisions when laws change

in order to ensure that the negotiated terms of existing contracts are protected. Red tape is a major impediment to investment; delays translate into lower returns. In the petroleum sector, for example, the recommended approach is to empower a single government entity (or competent authority) to implement policy in petroleum development. Such an authority can be used to resolve disputes involving petroleum investors and other government agencies.

9. Do prevent monopoly abuses. Monopoly abuses can emanate from national companies in the energy sector, from dominant players in the market place, from holders of "natural monopolies" (such as pipeline or power transmission companies), and from key service providers, such as power and water utilities. Regulatory oversight of monopolies may be required to prevent monopoly abuses.

10. Do ensure that the sector is kept free of corruption. Corruption is a major impediment to economic development. With its large financial flows, the energy sector is a tempting target for corruption.

Eliminating corruption is a complex process that takes both time and the absolute commitment of a country's leaders. Elements of an anticorruption program include the following:

- *Economic reform*. Adoption of sound development strategies creates an environment of hope in the future of the economy as a whole. The loss of such hope contributes to a shift toward corrupt practices for many of those who see in them the only chance for improving their own conditions.
- *Legal and judicial reform*. Clarifying and streamlining necessary laws, eliminating unnecessary laws, and strengthening the law enforcement capacity while putting in place an efficient and just judicial process are general steps for the creation of a sound investment climate. They are also necessary for reducing the incidence of corruption.
- *Administrative reform*. Reform of the civil service should make it responsive to actual needs. A key component of civil service reform (which also applies to the judiciary) is to provide adequate remuneration, reducing—and ideally eliminating—the need for public employees to take illicit bribes.

These reforms should be supplemented by the introduction of adequate checks and balances.

Ensuring the Financial and Commercial Viability of the Sector

For those segments of the energy sector that can secure ready access to international markets (for example, oil production), financial viability is dictated largely by market conditions, although it can be undermined by inappropriate fiscal policies. For those segments of the sector that depend on the domestic market—notably energy utilities—financial viability is dictated by the conditions prevalent within those markets.

During the Soviet period, utility services such as electricity were provided at tariffs that were considerably below full cost-recovery levels; state enterprises relied on budget support for their continued existence and provision of services. Low tariffs and the associated culture of state support led to high levels of energy consumption and to significant operational inefficiencies that have persisted across much of the region. These inefficiencies include weak payment discipline, high levels of technical losses, and tariffs set below full cost recovery levels. Ensuring that utilities function on a financially sustainable basis, without being a drain on the state's budget, requires addressing these three problem areas.

Strengthening Payment Discipline

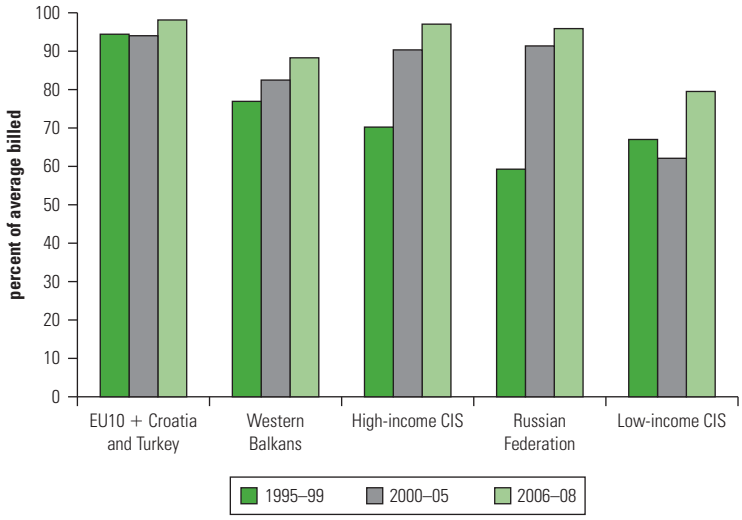
Strengthening payment discipline—the extent to which consumers pay for energy utility services—is a critical first step toward improving the financial viability of the energy utility service sectors, because it is a key determinant of the sectors' revenues. Doing so requires improving collection rates and addressing commercial losses, which can result, for example, from theft and the use of artificial norms that understate consumption.

Experience in the region has demonstrated that success in improving payment discipline depends fundamentally on the willingness of governments to introduce some key measures:

- Amending relevant laws that allow utilities to recover amounts due from customers in a timely fashion and to deny service to those who do not pay their bills
- Ensuring that public sector users (such as government departments and agencies) have adequate earmarked budget provisions to pay their utility bills and subjecting them to the discipline of disconnection for nonpayment
- Making theft of services a criminal offence, with associated deterrent punishments.

FIGURE 6.1

Average Collection Rates in the Region, 1995–2008



Source: EBRD 2008.

Improving Collections

Countries in Central and Eastern Europe introduced measures to improve collections relatively early in the transition period and were able to improve collection rates in a relatively short period of time. By the mid-1990s, the average collection rate in Bulgaria, Hungary, Lithuania, and Poland was already about 90 percent (figure 6.1). Since then the situation in the EU member states in the region has continued to improve and is now close to 100 percent.

Collection rates have also been improving in other countries in the region. However, challenges remain, particularly in Albania, Azerbaijan, the Kyrgyz Republic, Kosovo, FYR Macedonia, and Uzbekistan, where weak governance is emerging as one of the barriers to improving collections. Throughout the region, the legal framework needs strengthening to allow utilities to disconnect federal, provincial, and municipal agencies and facilities that fail to meet their payment obligations. In many countries, there are still long lists of public agencies and facilities that cannot be disconnected for nonpayment on the grounds that they perform a nationally important function or that disconnection would cause serious harm or production losses. If this is the case, these agencies and facilities should be allocated adequate funds to meet their service payment obligations.

Reducing Technical Losses

Technical losses for energy utility supplies remain high in the region. For electricity, they average about twice the OECD levels. Consolidated

TABLE 6.3

Total Technical and Commercial Losses in CSE/CIS Economies

Percentage loss	Economies
< 8	EU-15, Czech Republic, Slovak Republic, Slovenia
9–11	Bulgaria, Estonia, Hungary, Lithuania, Poland, Romania, Russian Federation
12–14	Armenia, Azerbaijan, Belarus, Georgia, Turkey, Turkmenistan, Ukraine
15–17	Bosnia and Herzegovina, Croatia, Latvia, Serbia
20–30	Kazakhstan, Kyrgyz Republic, FYR Macedonia, Montenegro, Tajikistan, Uzbekistan
> 35	Albania, Kosovo, Moldova

Source: For Kazakhstan, Kosovo, Kyrgyz Republic, Tajikistan, and Uzbekistan: Bank staff. For Montenegro: IEA 2008b. For all other countries: World Bank Development database 2007b.

technical and commercial losses in the power transmission and distribution networks show a wide range, from less than 8 percent in many of the region's EU countries to more than 35 percent in Albania, Kosovo, and Moldova (table 6.3).

Improvements should result over time, as assets are retired and replaced by new assets. In the short and medium term, technical losses can be reduced by rehabilitating and reinforcing the transmission and distribution systems.

Setting Tariffs to Recover Full Costs

A critical element required to ensure the financial viability of utility companies is setting and maintaining tariffs at levels that will provide for full cost recovery. Tariffs must be high enough to cover the cost of inputs and operating and maintenance costs as well as provide for the recovery of the capital investments needed to sustain the sector with an appropriate return on investment.

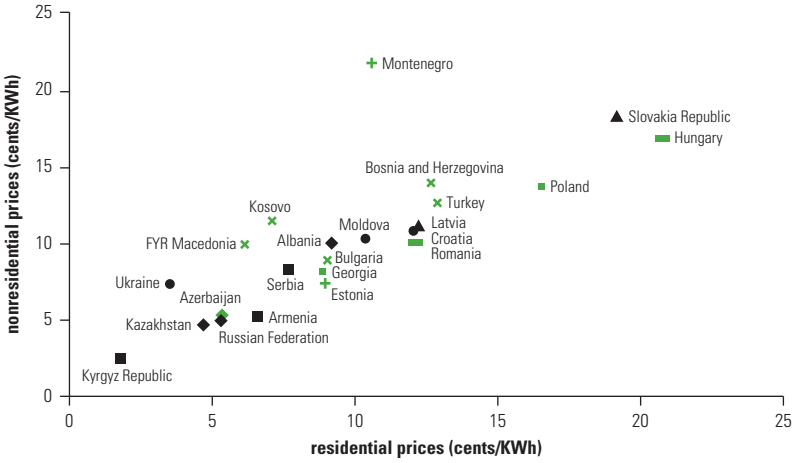
During the Soviet era, tariffs in the CSE/CIS countries were generally set at levels well below the long-term supply cost. The price structure was further distorted by cross-subsidies from industry and commercial operations to residential consumers. This pattern is still in place in a number of the countries in the region (see figure 6.2).

As a rule of thumb, the long-run marginal cost of generation will be 6.5–7.5 cents per kWh (excluding costs associated with transmission and distribution). This estimate is based on construction of a gas-fired combined cycle power plant and assumes a gas price of $250–$300 per thousand cubic meters.

In 2008 most CSE countries were covering the long-run marginal cost of generation (figure 6.2). As a result, utilities in these countries have been able to attract both foreign and domestic investors. In contrast, in many of the CIS countries, electricity tariffs did not appear to

FIGURE 6.2

Weighted-Average Residential and Nonresidential Electricity Tariffs in the Region, by Economy, 2008



Source: Energy Regulators Region Association, tariff database 2009.

be adequate to cover long-run marginal costs, although in a number of these countries—notably Russia—domestic tariffs for gas were well below international parity levels and hence short-run marginal costs were substantially lower than in countries in which gas was priced at full international levels.

In most of the countries in the region, the tariff for residential customers was equal to or lower than the tariff for nonresidential customers, despite the fact that the cost of supplying residential customers is higher than that of supplying nonresidential customers. This indicates cross-subsidization.

Structuring the Energy Sector to Attract Investment

Unbundling the energy sector is the single most effective structural mechanism a government can use to increase transparency and competition within the sector. Vertical unbundling in the case of the power sector refers to the separation of generation, transmission, and distribution entities. Horizontal unbundling involves separating power generation companies with a view to deepening competition and separating distribution companies to support industry liberalization.

Experience in the region suggests that reform programs should be adapted to suit the specific conditions of each country. The degree of

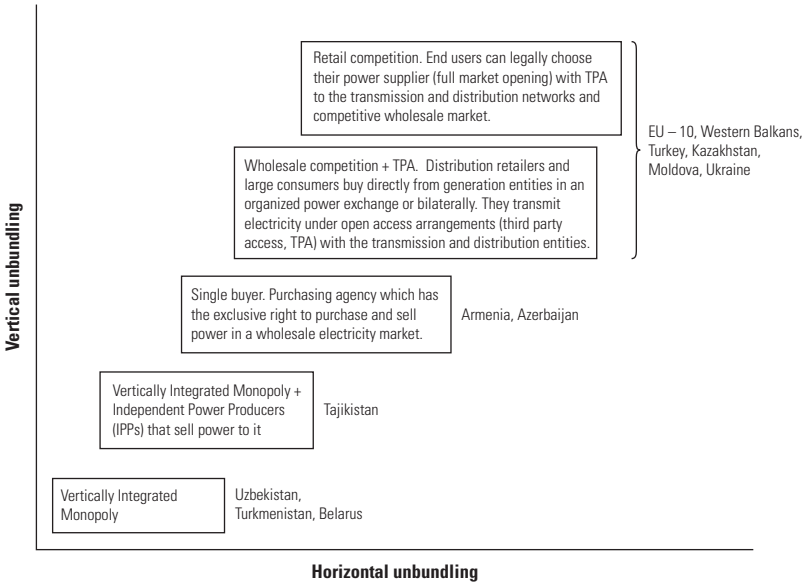
vertical and horizontal unbundling for one country may be different from that in another country; relevant factors to consider include system size, resource endowment, and institutional capacity to manage complex trading mechanisms (ESMAP 2006). In medium to large power markets with strong institutional capacity, full horizontal and vertical unbundling is generally preferred. For small markets, horizontal unbundling into small entities would generally not make sense, unless there are reasonable prospects for an open market with neighboring countries. However, some degree of vertical unbundling would help increase transparency of operations and facilitate both market growth and regional power trade.

Bearing this in mind, reform can be viewed in a broader sense as a means to improve the governance of the energy sector. By undertaking appropriate reforms, governments can create a commercially oriented environment that should attract capital inflows. Retaining a vertically integrated monopoly offers too many opportunities for noncommercial behavior that will be perceived by private investors as increasing risk.

There has been a widespread move toward sector unbundling of the power sectors in the region (figure 6.3). Only a few countries, such as

FIGURE 6.3

Horizontal and Vertical Unbundling in the Region's Electricity Markets, 2008



Source: World Bank staff.

Belarus, Turkmenistan, and Uzbekistan, still retain their state-owned vertically integrated power monopolies. However, despite significant progress in terms of market restructuring, there remain a number of obstacles to the operation of fully functional liberalized power markets, even in markets that have opened up both wholesale and retail competition. For example, the three largest generators control more than 70 percent of the generation capacity in the Czech Republic, Estonia, Latvia, Lithuania, the Slovak Republic, and Slovenia (all members of the EU10). In the retail market, concentration is even higher. Moving toward a more liberalized market structure in countries that have implemented only minimal reform and addressing the remaining obstacles for countries with more advanced reform programs are challenges that need to be addressed if appropriate levels of private sector investment are to be secured.

Addressing Affordability Concerns

One of the consequences of comprehensive energy sector reform is that the population will be expected to pay the full cost for the energy consumed. This is an issue for the poor in the region and one that requires appropriate mitigating measures. Energy prices need to be set at cost-recovery levels if investment is to take place to modernize old and build new capacity. But raising prices may push energy prices out of the reach of the poor and vulnerable. Household expenditure shares for energy continue to increase; the introduction of full cost-recovery pricing would make affordability a concern in many countries, particularly as poor households already devote a much larger share of expenditures to paying for energy than better-off households.

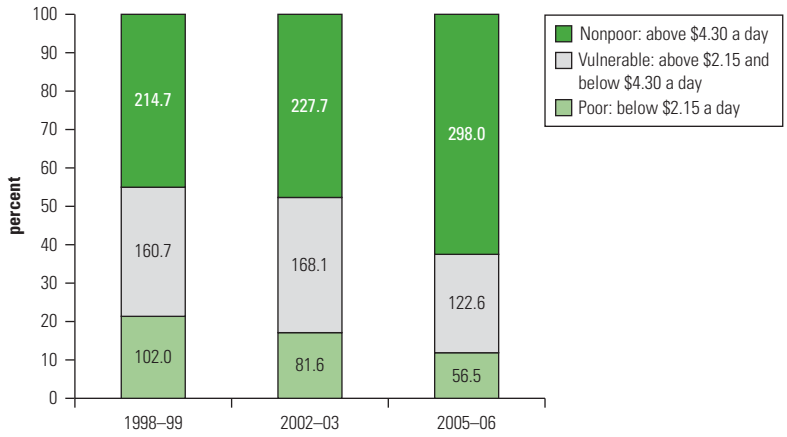
The contraction and transition of the region's economies in the late 1980s and early 1990s led to an impoverishment of the population of the region to such an extent that by 1998, nearly 21 percent—102 million people—were classified as poor (living on a daily income of $2.15 or less) (figure 6.4). Rising incomes have since dramatically reduced poverty by about 45 million poor and 38 million vulnerable. However, the current financial and economic crises have created the risk of higher poverty and vulnerability, especially in low-income countries.

In the past, governments in the region have used heat and power tariffs to industrial and commercial consumers to cross-subsidize residential tariffs, tolerated nonpayment of utility charges, and refrained from disconnecting nonpaying residential customers, especially for district heat supplies. These approaches are not sustainable, because

FIGURE 6.4

Population of the Region, by Poverty Status, 1998/99–2005/06

(millions)



Source: Bank staff estimates.

the heat and power suppliers are unable to cover their costs and maintain financial viability. Some governments have also provided tariff discounts, free coal, or both to different classes of "privileged persons," such as pensioners, war veterans, people with disabilities, and retired coal miners. This approach, found in many CIS countries, is designed more to reward service than to reduce poverty. It does not generally help the unemployed and their families, its leakage of benefits to nonpoor can be very high, and it can suffer from high levels of billing abuse.

Four instruments have proved effective in aiding the poor: lifeline tariffs, burden limits, earmarked cash transfers, and nonearmarked cash transfers. The appropriateness of each instrument has to be evaluated with reference to the following criteria:

- *Coverage*. What percentage of the poor is reached by this instrument?
- *Targeting*. What percentage of the subsidy goes to the poor?
- *Predictability*. Can the poor be sure what they will receive and plan accordingly?
- *Price distortion*. Does the scheme cause price distortions and impose economic welfare costs on the system?
- *Administrative cost*. How expensive is the scheme to administer? How practical is it under country circumstances?
- *Target consumption*. How good is the scheme at ensuring that households achieve a minimum essential level of heat and power access?

- *Balanced approach*. How good is the scheme at balancing the financial viability needs of power, heat, and fuel supplies with the ability of consumers to pay?
- *Cross-subsidization*. Is subsidization taking place within a subsector (for example, power) or between subsectors (for example, between power and heat)?

Many countries operate more than one option simultaneously in an attempt to improve coverage and targeting. To protect the poor during and after tariff reform, this report recommends providing cash transfers to the poor as the preferred instrument and lifeline tariffs as a second best if meters are installed. Policymakers need to weigh the pros and cons of various schemes (table 6.4).

Other actions could also help mitigate the effects on poor households. These include the following:

- Ensuring access to electricity services and implementing service standards, such as 24-hour supply with steady voltage and frequency regulation
- Using medium-term tariff plans and phased adjustment of tariffs
- Enabling fuel switching to cheaper energy, such as gas for heating and cooking
- Promoting energy efficiency, such as better insulation of houses to reduce heat losses and the use of energy-efficient appliances and light bulbs.

Governments also need to address other social concerns. Energy production, including hydropower development, can have significant negative social impacts for local populations. The region's governments should bring their legislation, regulations, procedures, and practices in line with good international practices for social mitigation by ensuring that people affected by projects are fully informed and consulted regarding current energy activities and proposed new developments. They should give special attention to the needs of women, children, youth, and disadvantaged groups, adopting initiatives to mitigate potential social risks and ensure that these groups get a fair share of the employment, income, and other benefits generated by the energy sector.

TABLE 6.4

Benefits and Shortcomings of Various Social Mitigation Schemes for Tariff Increases

Mechanism	Benefits	Shortcomings
Nonearmarked cash transfers (social security and/or pension schemes)	Coverage depends on the ability and willingness of the poor to meet the eligibility criteria; it is the least distortionary of the utility subsidy mechanisms. There are no additional administrative requirements if a social assistance system is already in place; there is no financial burden for utilities or other (nonhousehold) consumers.	The targeting ratio of the poor is usually at a medium or low level; there is a significant fiscal cost.
Earmarked cash transfers (cash payments or vouchers to selected households for payment of a part of the utility bills, to ensure that the families meet a specified household income target)	The targeting ratio is relatively high; the net financial burden on utilities is low.	Coverage of the poor is highly uncertain and in most surveyed countries low. Transfers are administratively demanding.
Lifeline tariffs (tariff in which the lowest block of consumption is charged at a rate substantially lower than the average tariff)	Coverage of the poor is high; targeting ratio improves as the size of the initial block decreases. Benefits received are highly predictable, especially through a two-block life-line tariff. The scheme is simple to administer.	Because the poor tend to be underrepresented among those with utility connections, many would not benefit. Administration requires reliable (tamperproof) metering or a reasonable proxy (such as apartment size for heating) to estimate consumption; disciplined meter readers/controllers are needed. There is a significant burden on the budget, on the finances of the utility, and on other (industrial) consumers (if the cost is recovered through a higher industrial tariff).
Notional burden limits (system under which households pay a specified percentage of their household disposable income, above which payments are made by the government to the utility)	Benefits can be predicted with reasonable certainty; administrative costs are relatively low.	Coverage and targeting of the poor is usually relatively low, and there are heavy administrative burdens on the poor associated with its application. It is one of the most distortionary mechanisms of all utility subsidy mechanisms on the demand side. It is costly for the budget and requires a network of offices to administer.

Source: World Bank 2005.