

EXECUTIVE SUMMARY

During the 1990s, the conventional wisdom about the electricity sector—public ownership and integrated utilities—was challenged by a new model of private ownership and unbundled utilities. Debates about the viability, applicability, and feasibility of market-led electricity reforms continue today. Nonetheless, at the turn of the new century, countries around the world are taking tentative steps toward this new approach.

These shifts in the electricity sector have not occurred in isolation. The new model is part of a broader thrust toward the promotion of markets, a growing role for private capital, and global economic integration. These themes place electricity sector reforms squarely within larger processes of economic globalization and the debates about its merits and costs.

Electricity sector reforms and the financial flows they attract have serious implications—potentially both positive and negative—for long-term sustainable development goals. A sector designed to ensure access to electricity for all could bring considerable social benefits, including opportunities for education, better health and nutrition, and entrepreneurship. A sector designed with environmental considerations in mind could significantly mitigate the build-up of global and local pollutants. Failure to address these social and environmental concerns—collectively “public benefits”—could undermine progress toward sustainable development.

Decisions made now about the institutional structure and functioning of the electricity sector will shape social and environmental outcomes for

decades to come. Whether market-led or not, reforms will best support sustainable development outcomes when they are explicitly designed to do so.

The central question for this study is: *How can the process of reforming the electricity sector support rather than hinder promotion of sustainable development outcomes?* We approach this question by examining the process and politics of reform in six countries in the developing world and economies in transition—Argentina, Bulgaria, Ghana, India, Indonesia, and South Africa. These countries were selected to ensure a mix across early and late reformers, large and small countries, and to provide a geographic spread. To answer the central question, each country study asks:

- What were the drivers of reform in the electricity sector?
- What political interests were at stake in reform of the sector, and how did they shape the reform process?
- What role did the World Bank and other international donor agencies play in electricity sector reforms?
- How and by whom were social and environmental concerns addressed in the process of designing electricity reforms, and with what outcomes?

Each country study was conducted as a collaborative exercise between the World Resources Institute and a research partner from the country studied. Specific issues in a small number of additional countries were briefly examined to supplement the main case studies. Our methods were semi-struc-

tured interviews with key informants from government agencies, civil society, the private sector, and international agencies—all conducted on a not-for-attribution basis to encourage candor. This information was supplemented by official government and donor agency reports, other secondary materials, and media reports.

ELECTRICITY SECTOR REFORM AND A SUSTAINABLE DEVELOPMENT AGENDA

Reform of the electricity sector is on the agenda in much of the developing world and in transition economies. Diminished barriers to private capital flows, technological change in power generation technologies, and ambitious early experiments with institutional restructuring in Chile and the United Kingdom have stimulated reform efforts around the world. In developing and transition economies, a World Bank policy of conditioning loans on institutional restructuring provided a further impetus to reform. By 1998, of a sample of 115 developing countries, 33 percent had passed new electricity laws, 29 percent had established an independent regulator, and 40 percent had allowed the entry of privately owned independent power producers (IPPs) (Bacon, 1999).

The approach to reform will determine whether it supports or undermines sustainable development. Electricity restructuring will influence important social concerns such as access to price, quality of service, and labor impacts. In a restructured electricity market, price signals and a profit motive alone will be insufficient to ensure that social goals in the sector are met. (*See Box.*)

Electricity reform will also shape the future environmental profile of the sector. Market incentives for economic efficiency will likely result in greater environmental efficiency in the short run. However, reforms may not help realize a clean energy future in the absence of explicit planning mechanisms that factor in environmental benefits and costs. Electricity restructuring also provides a rare opportunity to spur

the transition to a “micropower” future based on small-scale distributed generation. To do so, reform designers will have to be attentive to the environmental implications of economic regulatory decisions in order to provide a level playing field and ensure that reforms do not reduce opportunities for end-use energy efficiency. (*See Box.*)

CASE STUDY FINDINGS

The six case studies suggest that, with the exception of South Africa, there has been little political commitment to promoting sustainable development through electricity sector reforms.

Argentina: Reforms in Argentina were stimulated by a severe macroeconomic crisis in the late 1980s. Facing hyperinflation, a heavy debt burden, and declining quality of public services, Argentina’s reform program was intended to reduce the government’s role in providing key services, including electricity. The reforms were designed by a small group of politically powerful bureaucrats—supported by multilateral agencies such as the World Bank—with little scope for broader debate. The reforms did lead to improved quality of service in urban areas and increases in system efficiency. However, they also undermined incentives to increase energy efficiency, limited expansion of electricity to isolated rural populations, placed a disproportionate burden on low-income consumers, and failed to effectively manage expansion of the transmission system. A second generation of reforms in the late 1990s has attempted to address some of these concerns.

India: In India, concerns over the financial state of the sector dominated reform design. In 1991, the government provided incentives for electricity generation to stave off a balance-of-payments crisis. The effort to attract private capital not only failed to increase capacity as planned, but also locked the sector into adverse financial and institutional arrangements. The World Bank played a central role in initiating a second stage of state-level reforms beginning in 1996 to address the fundamental problem of inadequate revenue flow in the sector.

BOX**HOW DOES ELECTRICITY REFORM AFFECT SOCIAL AND ENVIRONMENTAL CONCERNS?***Social*

Access: In a restructured electricity market, profit alone is often an insufficient driver for expanding access to relatively unprofitable rural customers and the urban poor. Incentive schemes, subsidies, or regulatory mandates may be required.

Price: Electricity reforms are typically associated with pressures to limit subsidies and enhance tariff collection. While these changes make for a better functioning sector, the resultant price increases can also cause social hardships and spur political opposition to reforms. A mitigation strategy can address these costs.

Quality: Competition in restructured markets may increase the reliability, choice, and responsiveness of electricity service providers, but is not guaranteed to do so absent appropriate regulation and oversight.

Labor: Public sector electric utilities face job cuts as a result of reforms. This retrenchment will bring social costs. Opposition from labor interests can be a political deterrent to reforms and will have to be addressed and mitigated.

Environmental

Technology/Fuel choice: The choice of technology and fuel used to generate electricity has environmental impact. The market structure put in place by reforms can affect technology choice by changing the relative attractiveness of capital-cost intensive technologies versus those based on high running costs. In addition, the existence and basis of a planning framework for electricity will determine whether environmental considerations factor into a long-term vision for the sector.

Regulatory decisions: Economic regulatory decisions often also have environmental outcomes. Regulators can influence how level the playing field is for different technologies. They can also implement a strategic vision for the sector. Regulators must have the mandate and training necessary to play these roles.

Incentives for efficiency: Electricity reforms that enforce financial discipline should contribute to greater efficiency of supply, with environmental gains. However, reforms can introduce additional transaction costs, and obscure price and other signals to customers, raising obstacles to end-use efficiency improvements. Conversely, competition could spur retailers to market end-use efficiency services.

State-level reforms have produced mixed results at best. Privatization efforts have been fraught with difficulty. Where utilities have been privatized, the change has not produced expected gains. Efforts at promoting public benefits—such as energy efficiency at the state level and incentives for renewable energy sources—have been relatively few and have suffered from a lack of political commitment.

Indonesia: Early efforts at attracting private capital for electricity generation in Indonesia in the mid-1990s occurred under a shadow of corruption. These efforts also invited World Bank disapproval,

reversing long-standing donor support for Indonesia's power sector. The result was the construction of costly excess generation capacity, which colored future reform efforts. The 1997 Asian financial crisis spurred an attempt at broader reform as part of an IMF-led economic adjustment strategy. The post-crisis reform effort was accompanied by a consultation process personally led by the Minister of Energy and Mines. This process was stalled by political upheavals, unresolved issues with IPPs, and the political challenge of raising tariffs. Social equity—in particular concerns over tariffs—have been at the forefront of reform debates, while

environmental concerns have scarcely influenced reform design.

Bulgaria: Reforms in Bulgaria were initiated by an IMF stabilization program in 1997 following a period of financial crisis, but the reform program was shaped by national political currents. Government-led reforms have been driven in large part by a determination to become an energy exporter, despite evidence that this is not a viable strategy—a position that was only reversed with a change in government in 2001. Despite Bulgaria's environmental obligations under the Kyoto Protocol and its candidacy for European Union membership, environmental concerns did not play a role in shaping reforms. After an initial focus on financial issues and prices, donors have actively promoted attention to the considerable gains to be achieved from encouraging energy efficiency in the economy as part of a reform strategy. Under a new government, a shift in political focus has improved the prospects for this approach.

Ghana: Reforms in Ghana were driven by a shortage of financing for much-needed capacity expansion in 1995; sector reform was a condition of World Bank lending for new capacity. But the Ghanaian government set aside the Bank's recommendation for limited reforms and took the initiative to develop a more extensive design. An important political actor in this process was the large and powerful Volta River Authority, which initially feared its position in the sector would be threatened by reforms. Although expansion of access to electricity is a significant issue in Ghana, the government failed to integrate existing electrification efforts with institutional reforms. While there was little explicit focus on environmental issues in the course of reform design, measures to promote energy efficiency and provide incentives to renewable energy sources were added to reform efforts.

South Africa: Reforms in South Africa are driven by a broader national agenda to restructure state-owned enterprises, initiated in the mid-1990s. Reform in the electricity sector began in earnest in the late 1990s. While financial considerations are important in South Africa, reforms have not been spurred by an

immediate short-term financial crisis, either in the sector or in the economy at large. As a result, the national government has exercised considerable control over reforms, and has framed them around social issues such as access to energy and black economic empowerment. The existing public utility, Eskom, has been an important political actor in discussions about whether this agenda is better served by the existing system or by a restructured sector. In addition, reforms in South Africa have provided scope for broader consultation and debate, a process in which donor agencies have played a restricted, information-provision role.

A comparison across the case studies suggests several common themes:

Electricity reforms are driven by economic and financial concerns, and by donor conditionalities.

Reforms in Argentina, Indonesia, and Bulgaria were undertaken in an environment of macroeconomic crisis. In India, Indonesia, Bulgaria, and Ghana, donor conditions were the immediate reason for undertaking reforms. As a consequence, reform design was often driven by an immediate need to attract capital—a trend reinforced by donor agencies. However, efforts to attract capital, particularly through IPPs, have caused more problems than they have solved. In India and Indonesia, IPP entry has been accompanied by allegations of corruption and undermined the financial and institutional health of the sector. In Argentina, the urgent need for capital led to privatization at reduced prices. While reforming countries are criticized for not providing sufficient incentives to attract foreign capital, it is not clear whether such incentives are politically viable and socially desirable. Structuring reforms mainly to attract finance may not be a sustainable long-term strategy for the sector. Moreover, the focus on financial issues crowds out attention to public benefits.

Closed political processes and politically powerful groups constrain attention to sustainable development objectives.

To a large extent, reforms were designed by government bureaucrats and their consultants in the energy and finance ministries, to the exclusion of other voices. In Argentina, for example, reforms were designed and implemented with great speed by a small group of technocrats. Even within governments, the cases show little evidence of involvement by environment and rural development ministries in the design stage of reform. Despite a vibrant civil society, the cases do not provide instances of participation or influence by nongovernmental organizations (NGOs) in policy design, even though several NGOs have been active in this area. South Africa—with a more open reform design process, greater engagement by a range of ministries, and more participation by outside experts—is an exception.

In all the cases, tariff increases and restructuring have proved to be the single biggest sticking point to electricity reform and have been greeted by popular uprisings in Argentina, India, Indonesia, Ghana, and South Africa. Powerful political constituencies have also been obstacles to reform. In Ghana and South Africa, existing public utilities initially argued for their continued viability as integrated public entities. Faced with the possibility of socially destabilizing labor retrenchment, labor unions have been a political force against reform. However, in both Argentina and Bolivia, unions won a share in the equity of privatized state enterprises demonstrating the possibility of political compromise.

The case studies do not conclusively demonstrate that an open process is preferable to the quick and stealthy approach to reforms. The threat remains that open reform processes could be politically captured by narrow interests. However, there are indications that an open process is the better alternative. To be politically sustainable, the public must believe that reforms will lead to demonstrable benefits—an outcome that is better supported by a transparent process. An exclusive process is also prey to being

subverted and used for narrow ends by the new wielders of authority, as was arguably the case with the experience of IPPs in Asia. An open process would provide checks on such abuses of power.

Donor agencies have initiated reforms and advocated attention to environmental concerns, but have been hampered by past reputation and a perception of favoring private interests.

Donor agencies have been central to cutting through a domestic political morass to initiate reforms. In India, it took World Bank intervention for governments at the state level to agree to seriously examine the need for new institutional and financial arrangements. While this initial firmness may have been necessary, a continued heavy hand in steering reforms undermined domestic ownership, with negative consequences. For example, donors sought to expand the role for the private sector and establish the conditions for profit making in Ghana and India, when it was not clear that the regulatory environment was sufficiently developed to support those changes.

At the same time, donor agencies have often taken the lead in preparing studies and undertaking projects related to the environmental dimensions of electricity reform. World Bank studies on the environmental impact of restructuring have been influential in shaping policy in Bulgaria, as have efforts by the Danish government to promote renewable energy in Ghana. Often, however, these efforts have been late, too restricted in scope, and not backed by adequate political signals.

Moreover, donor agencies' efforts to provide assistance have been hampered by a reputational burden built over a decade or more of controversial structural adjustment policies, which the public associated with economic hardship and undue promotion of private sector interests. This reputation has been worsened by the industrialized countries' efforts to promote the interests of their own corporations. Such was the case in Indonesia, where one

arm of the U.S. government sought to promote a large U.S.-funded IPP, even as an advisor supported by its aid agency, USAID, cautioned against the project.

To be effective, public benefits need to be factored into reform design early and backed by political commitment.

For reform designers, ensuring a financially viable sector was the most relevant definition of public benefits. Social and environmental concerns were matters to be grafted onto reforms at a later stage. However, the Argentina experience—where reforms led to subsidy removal and tariffs that were skewed against low-income groups—suggests that a *laissez faire* approach does not automatically support social objectives and can undermine equity in outcomes. Since technical, political, and institutional decisions made during reforms constrain future choices, it is hard to retrofit the sector to address public benefits.

For example, IPPs in India and Indonesia locked those countries into large generation plants. This undermined efforts at energy efficiency and committed utilities to buy electricity at uncompetitive prices. In another example, regulators' mandates, priorities, and skills were established in the early stages of reform. Without attention to sustainable development goals in the inception process, it will be an uphill battle to re-direct regulators' attention from short-term concerns to longer-term social and environmental concerns.

These longer-term concerns merit attention. In several countries shifting to a decentralized, market approach has contributed to the absence of a broad vision for the sector. In Argentina, this absence undermined the integrity of the transmission system. In India, the central government has belatedly attempted to forge a broad vision to guide state-level reforms. In Bulgaria, a vision for the future was initially built on an unviable export strategy. Most significantly, pressing social and environmental

concerns have not been integrated into reforms. In India and Ghana, the process of institutional reform was not coordinated with ongoing, and ineffective, electrification programs. By contrast, in South Africa reforms have been closely associated with a political commitment to expand access to electricity. In Bulgaria, international environmental commitments have not played a role in electricity reform, despite the sector's considerable environmental footprint. Without a broad vision and political support, the case studies suggest that public benefits are prey to political whims and shifting trends in donor assistance.

RECOMMENDATIONS: TOWARD A PROGRESSIVE POLITICS OF ELECTRICITY SECTOR REFORM

Integrating environmental and social benefits into electricity sector reforms in developing and transition economies will continue to be a daunting challenge. Not only are reforms technically complex, but the combination of macroeconomic crisis, entrenched political interests, and centrality of costs often crowd out attention to environmental and social factors. However, the country studies do offer insights into how reforms are currently shaped, and therefore into how attention to concerns of equity and sustainability can be reinserted into the reform process.

1. Frame reforms around the goals to be achieved in the sector.

A narrow focus on institutional restructuring driven by financial concerns is too restrictive to accommodate a public benefits agenda. To build a framework that includes such an agenda requires an articulation of the services that a reformed sector is intended to provide and the means by which it should do so. While donor agencies often play a central role in initiating reform, they must step back during the process of defining goals to allow a nationally-driven vision of reform to emerge.

2. *Structure finance around reform goals, rather than reform goals around finance.*

Reform processes have catered to a need to attract private capital. Since sustainable development may not always be aligned with short-term profit motives, reform processes must move beyond the imperative of attracting capital. While this may seem a far-fetched notion in capital-constrained developing countries, the time may now be opportune to change the terms on which private capital enters a country. Efforts to attract capital through risk mitigation and tariff increases have not won popular backing, and as a result have not been politically sustainable. A broader vision of reform and a public consensus supporting that vision could lower these risks. Private capital may be willing to accept more realistic financial returns, if they are combined with less risk. Political legitimacy in a reform program, tied to some innovation in mechanisms for raising finance, may be a more promising route than tailoring reforms to short-term profit horizons.

3. *Support reform processes with a system of sound governance.*

An open-ended framing of reforms will reflect public concerns only if it is supported by a robust process of debate and discussion. Hence, a third imperative is to embed debate over electricity sector reforms in a sound process of decisionmaking guided by transparency, openness, and participation. Such an approach is more likely to provide the political space for articulation of a range of public concerns than have the closed processes prevalent thus far. It is also more likely to build public consensus in support of reforms, making for a more politically sustainable process.

4. *Build political strategies to support attention to a public benefits agenda.*

It is important that public benefits advocates strengthen political coalitions supporting sustainable development and counter those favoring parochial interests. In particular, the case studies suggest that social concerns carry far more political weight in a national context than do either local or international environmental issues. Efforts to exploit links between social and environmental agendas would likely be a useful political approach.

By focusing on financial health, reforms in the electricity sector have excluded a range of broader concerns also relevant to the public interest. In this study, we have examined the social and environmental concerns at stake in these reforms. We have found that not only are they inadequately addressed, but that socially and environmentally undesirable trajectories can be locked-in through technological, institutional, and financial decisions that constrain future choices. Consequently, social and environmental benefits need to be internalized early in reform decisionmaking.

To do so, the process by which reform goals are defined and reform decisionmaking must change to embrace a more consensus-driven design of reforms. More complex processes bring with them greater risks of capture by special interests and failure due to a cacophony of voices. Yet exclusive reforms of the electricity sector have not incorporated the breadth of interests that deserve a voice and have not yet shown themselves to be sustainable—financially, socially, or environmentally. This study has suggested several reasons to believe that a modified approach guided by a vision of a socially and environmentally sustainable electricity future may yield a more satisfying outcome.

REFERENCE

Bacon, Robert. 1999. *Global Energy Sector Reform in Developing Countries: A Scorecard*. Report 219/99. Washington, D.C.: ESMAP.

