

## BULGARIA

## SUPPLY-LED VERSUS EFFICIENCY-LED ELECTRICITY REFORM

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## INTRODUCTION

Electricity sector reforms in Bulgaria have taken place under the shadow of extreme economic crisis and under the watchful eye of the International Monetary Fund (IMF). This crisis context is similar to that of several other studies in this study: a history of inefficient operation, flawed price signals, and the potential social costs of price reform. But the Bulgaria case, and that of Central and Eastern Europe in general, also differs from reforms in developing countries in several ways. Most significantly, access to electricity in Bulgaria is more or less assured, and the country has surplus generation capacity. In addition, Bulgaria bears significant international environmental commitments that raise the profile of environmental concerns. With commitments under the Kyoto Protocol, along with a dramatically enhanced environmental profile required for accession to the European Union (EU), environmental concerns presumably would rank high on an electricity sector reform agenda. For a profile of the electricity sector in Bulgaria, see Box 6.1.

Despite these circumstances, reforms in the electricity sector have been dominated by short-run economic concerns. Where social factors have played a role, it has largely been in postponing socially difficult decisions rather than finding lasting solutions. In spite of external pressures, reforms have proceeded without explicit attention to opportunities for environmental gains. The failure to anticipate either social or environmental concerns is arguably

**BOX 6.1 | PROFILE OF THE ELECTRICITY SECTOR IN BULGARIA**

Population (2001)<sup>1</sup>: 8.1 million

Percentage of households with access to electricity<sup>2</sup>:  
Rural: 100%      Urban: 99.9%

Installed electricity generation capacity (1999)<sup>3</sup>  
Total: 12 gigawatts (0.37% of total world capacity)  
Thermal: 58%  
Hydro: 17%  
Nuclear: 33%  
Geothermal and Other: 0

CO<sub>2</sub> emissions from electricity and heat as a share of national emissions (1999)<sup>4</sup>: 56%

## Notes

1. World Resources Institute. 2000. *People and Ecosystems: The Fraying Web of Life*. Washington, D.C.: World Resources Institute.
2. Alan Townsend. 2000. "Energy access, energy demands, and the information deficit." *Energy Services for the World's Poor*.
3. [www.eia.doe.gov/pub/international/ieapdf/to6\\_04.pdf](http://www.eia.doe.gov/pub/international/ieapdf/to6_04.pdf) (February 6, 2002).
4. Computed by WRI using International Energy Agency (IEA) data, 2001. *CO<sub>2</sub> Emissions from Fossil Fuel Combustion*. Paris: OECD.

rooted in the conflicting incentives faced by various government actors, the delayed attention given to these issues by donor agencies, and the lack of an

active, vocal, and capable constituency to advance attention to public benefits. Fortunately, there are hopeful signs of change; both a new government elected in 2001 and the World Bank have introduced initiatives that pay far greater attention to the social and environmental dimensions of reform.

## BACKGROUND

### Macroeconomic, Social, and Political Crises

Electricity reform in Bulgaria took place during a decade of economic and political change, when the nation began the difficult transition from a socialist to a market-led economy and society. This transition has been marked by several crises.

In 1991, the government initiated an economic stabilization program based on restrictive monetary and fiscal policy.<sup>2</sup> The resulting budgetary restrictions led to social unrest in the early 1990s, forcing somewhat less restrictive policies. By 1994, a currency crisis led to a near doubling of the exchange rate in just one year and a steep increase in inflation to a 90-percent average annual rate. Between 1995 and 1997, a precipitous drop in hard currency reserves, burgeoning debt payments (Todorov, 2001), and the failure to negotiate a successful agreement with the IMF all combined to undermine public confidence in the financial system. In 1996, private citizens responded with a run on bank deposits.

The economic crisis, and the imposition of austerity measures to tame it, took a terrible social toll. Between the early 1990s and the height of the crisis in 1996, the average wage had fallen by about 80 percent, the average pension by 84 percent, and the “guaranteed minimum income” by 70 percent.<sup>3</sup> Due in part to the insolvency of state enterprises, unemployment levels soared, reaching 15 percent in 1997 (National Statistical Institute, 1998). As employment dropped, so did payments into the country’s social insurance system. By mid-2000, when energy sector reforms were to begin, the country faced a fragile

economy recently emerged from deep crisis, a society losing patience with a decade of declining living standards, and a government that sought to balance responsible financial policies and commitments to donors, against the demands of a weary population tired of austerity.

### The Pre-Reform Sector

As in many other parts of Central and Eastern Europe, the pre-1989 electricity sector in Bulgaria was shaped by several strategic concerns. At minimum, policymakers in the sector considered it important that the country was fully electrified and that regular and reliable supplies were available to power the economy. In addition, energy security has been and continues to be a major concern. Bulgaria is relatively energy-poor. It has traditionally relied on imports, primarily from Russia, for between 65 and 70 percent of its fuels (National Statistical Institute, 1993). While importing primary fuel, Bulgaria has been an exporter of electricity to neighboring countries. By the late 1990s, the country generated surpluses for export on the order of 2,000 megawatts, which provided much-needed revenues for the state budget. Electricity exports also serve political ends, which have changed over the years. Over the last five years, exports to neighboring Turkey have served to strengthen political and economic ties with this potentially large customer for Bulgarian power. Finally, the energy sector (particularly when the coal sector is included) is a major employer, accounting for 4.5 percent of all jobs available in Bulgaria in 1999 (National Statistical Institute, 2000).

As a result of these concerns, the pre-reform sector was integrated and control was centralized under a government agency. The Energy Committee (renamed on many occasions between 1989 and 2001) was responsible for policy development for the coal and natural gas sectors and for electricity generation, transmission, and distribution. This body, later reconstituted as the State Agency for Energy and Energy Resources (SAEER), had primary responsibility for restructuring energy institutions in the country. In December 2001, it was renamed yet again

as the Ministry of Energy and Energy Resources. In 1997, a National Energy Efficiency Agency was also created, later transformed into a State Energy Efficiency Agency.

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*Due to age and poor maintenance, the system as a whole is highly inefficient.*

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The Energy Committee had policy responsibility, but the responsibility for managing and operating the generation, transmission, and distribution of electricity was almost exclusively handled by the state-owned National Electricity Company (Natsionalna Elektricheska Kompania - NEK). This two-tier arrangement, which existed with minor modifications until about 1999, led to considerable lack of transparency in financial management. The two institutions shared subsidies and revenues in a manner that undermined financial responsibility. For example, revenues were allocated through an extra-budgetary Energy Resource Fund, which was managed by a board of directors and chaired by the president of the Committee of Energy. The electricity, coal mining, and district heating sectors were linked by the opaque shuffling of finances through the Energy Resources Fund. With little knowledge of the true cost of inputs, and therefore of true returns in the sector, there was little scope for prudent financial management. The financial implications of these arrangements were serious, since the Energy Resource Fund was considerable. The expected income of the fund was BGL 268 billion, (\$152 million), or 6.42 percent of the State Budget for 1998 (Alexandrova, 1997).

An additional problem in the sector was the poor condition of the nation's power infrastructure. Prior to reforms, NEK controlled 90 percent of generation, with the rest owned by district heating companies. Many of the coal-powered plants, which together with other thermal sources account for about 48 percent of generation, were built in the 1950s and 1960s. The Kozloduy nuclear power plant, which provides about 44 percent of all electricity generated in

Bulgaria, is an old design and among the most risky in Europe. Hydropower plants provide the remainder 7 percent of generation (National Electric Company, 2001). Due to age and poor maintenance, the system as a whole is highly inefficient. Between 30 and 35 percent of power generated is lost during transmission and distribution, in part due to theft. With high reliance on coal, the sector contributes significantly to local air pollution and to emissions of greenhouse gases. Energy production and transformation activities actually are the single most important contributor to greenhouse gases, and account for about 65-70 percent of the country's total carbon dioxide emissions (Republic of Bulgaria Council of Ministers, 2000a).

From the early 1990s, donor agencies played a significant role in attempting to reform the sector, largely through a series of studies and programs of technical assistance. These included efforts at load forecasts for the sector; a least-cost generation and transmission expansion program; a tariff study; a study on approaches to reorganization of the sector; and a feasibility study for retrofitting and rehabilitation of thermal power projects (World Bank 1992a; 1992b; 1993; Center for the Study of Democracy, 1995). A range of agencies were engaged in these efforts, including the World Bank, the Commission of the European Community, United States Agency for International Development (USAID), United States Environmental Protection Agency (USEPA), and United States Trade and Development Program (USTDP). A World Bank summary study recommended increasing efficiency through more realistic pricing policies and energy saving investments; expanding domestic production and reducing imports; and improving safety and the environmental performance of the sector (World Bank, 1992b; 1993).

In addition to studies on the energy sector, donor agencies also conducted studies of Bulgaria's environmental performance. A March 1992 joint World Bank, USAID, and USEPA study on an environment strategy for Bulgaria concluded that the poor state of the environment was rooted in the flawed economic and management policies of the transition period

(World Bank, 1992a). It suggested that market reforms, particularly privatization, would bring tangible environmental improvements. The report assumed that environmental improvements would be an indirect benefit of market reform, and did not emphasize the need for environmental protection and consideration apart from market liberalization. A subsequent December 1994 World Bank study did find marked improvements in the environmental situation. Distressingly, however, these improvements were largely a result of declining economic activity (World Bank, 1994).

Environmental concerns were an input into the design of a World Bank Bulgaria Energy Project initiated in 1993. The project aimed at improving the operating efficiency of the system; introducing commercial practices at NEK; realigning, improving, and depoliticizing the tariff structure; reducing the need for high-cost imports of electricity; and increasing safety in the system (World Bank, 1993). These were to be accomplished through two technical components and a third component based on technical assistance and directed at institutional reform. Drawing from the environment strategy study, the energy project aimed to achieve these goals by increasing energy conservation and efficiency of use. This approach foreshadowed subsequent reform efforts.

However, implementation was limited for political reasons. First, the government changed hands in 1993, leading to a dismissal of the management team of the Committee of Energy and NEK. While the new team made progress on one of the technical components of the project, the real casualty was the institutional reform component. The government's overall policy was to maintain the public monopolies in critical sectors such as electricity generation. This policy stalled reform in the electricity sector. The donors promoted commercialization in the sector as a first step in breaking the monopoly—to be followed by a separation of power generation, transmission, and distribution into separate entities.<sup>4</sup> But the new socialist government contended that the structure of the sector, built around the premise of a centrally planned economy, precluded commercialization. The

government's main anti-reform argument was technical. They argued that each power facility was built to support a specific load of the system, and the opportunity for real competition between them was very limited.<sup>5</sup>

While the government rejected a reform trajectory based on eventual private ownership of the sector, it failed to formulate an alternative vision and did not undertake the financial and management reforms needed to put the sector on a sound footing.

In addition to donor engagement, Bulgaria also faced external pressures pertaining to international political obligations. Bulgaria is a signatory to the UN Framework Convention on Climate Change. As an Annex 1 country under the Kyoto Protocol, it will have to reduce its emissions by 8 percent from a 1988 baseline level during the period 2008–12. However, as with other countries in the region, aggregate greenhouse gas (GHG) emissions have declined precipitously due to an economic slowdown, and by 1997 were 40 percent below 1988 levels (Council of Ministers, 2000a). Nonetheless, there are good reasons to continue to pay attention to these emission levels. First, emissions are likely to grow as economic growth picks up, and second, emission reductions offer potentially valuable financial opportunities to Bulgaria in an emerging market for greenhouse gas reductions.

Along with international climate obligations, Bulgaria also has obligations as a candidate for EU membership. These commitments are covered in a series of agreements that concern nuclear safety, integration of energy markets and promotion of competition, and improvement of energy efficiency and reduction of environmental harm from the sector (Energy Charter Secretariat, 1996). In particular, the EU electricity directive requires all members to introduce competition in the sector, although it leaves open whether there must be a complementary shift in ownership in the sector.<sup>6</sup>

In short, with the move to a market-based system as part of a larger political and economic transition in Bulgaria, several prior assumptions remained open

to challenge. A market-based approach called into question the state's ability to manipulate the sector based on energy security concerns. A more transparent fiscal system, which could send signals to market participants, potentially undermined the financial web that supported the sector. And with pressing international environmental obligations, the environmental profile of the sector stood to be altered by a reform approach.

## The Reform Trigger

The immediate trigger for electricity sector reforms was a dramatic escalation in the economic crisis in the mid-1990s. Inflation grew by 552 percent between January and March 1997 (National Statistical Institute, 1998). By late 1996, GDP was only 58 percent of its 1990 levels (National Statistical Institute, 1994; 1999). Faced with this unsustainable position, the socialist government resigned in February 1997, creating a political crisis.

The crisis showed signs of abating in April 1997, when a new government with a majority in Parliament came to power on a pro-reform platform. This administration negotiated a stabilization agreement with the IMF in May 1997 that was based on two main conditions. First, it committed to a program of fiscal discipline and austerity, with a stable macroeconomic policy to be anchored by a currency board. Moreover, the agreement required liquidation or privatization of 50 percent of the long-term material assets under control of branch ministries or municipalities. Efforts at stabilization did have positive short-term results—GDP growth went from negative to positive rates, inflation came under control, and the budget deficit shrank between 1996 and 1999. At the same time, the price of stability was reduced national control over decisionmaking across a broad range of economic and social policies. In particular, state expenditures for social policy had to be negotiated directly with the IMF. Another important condition of the IMF package was reform of the energy sector. Hence, the financial crisis and IMF conditionality as part of a stabilization package was a direct trigger for reforms in the energy sector.

## The Reform Design

Under the proposed structure, the post-reform sector in Bulgaria would operate along the lines of a “single-buyer” model. As a first step, the design required that the property and assets of NEK be clearly delineated among generation, transmission, and distribution units, including a clear accounting division of existing credit arrangements. Based on this allocation of property rights, several generation units, particularly the hydro and thermal units, were to be offered for privatization. Two of the Kozloduy nuclear plant's six units were scheduled to be decommissioned, while others were to be upgraded to meet safety standards. The nuclear plants were not scheduled for privatization and would remain under the control of the government.<sup>7</sup> With regard to distribution, the three-year plan of action agreed to with the IMF envisaged that distribution companies would be legally separated from NEK by the end of 1999. This was eventually accomplished in 2000. After this unbundling of NEK, based on a clear accounting separation, a publicly owned transmission company remained, with additional responsibility for planning, investment, dispatch, and power trade functions.

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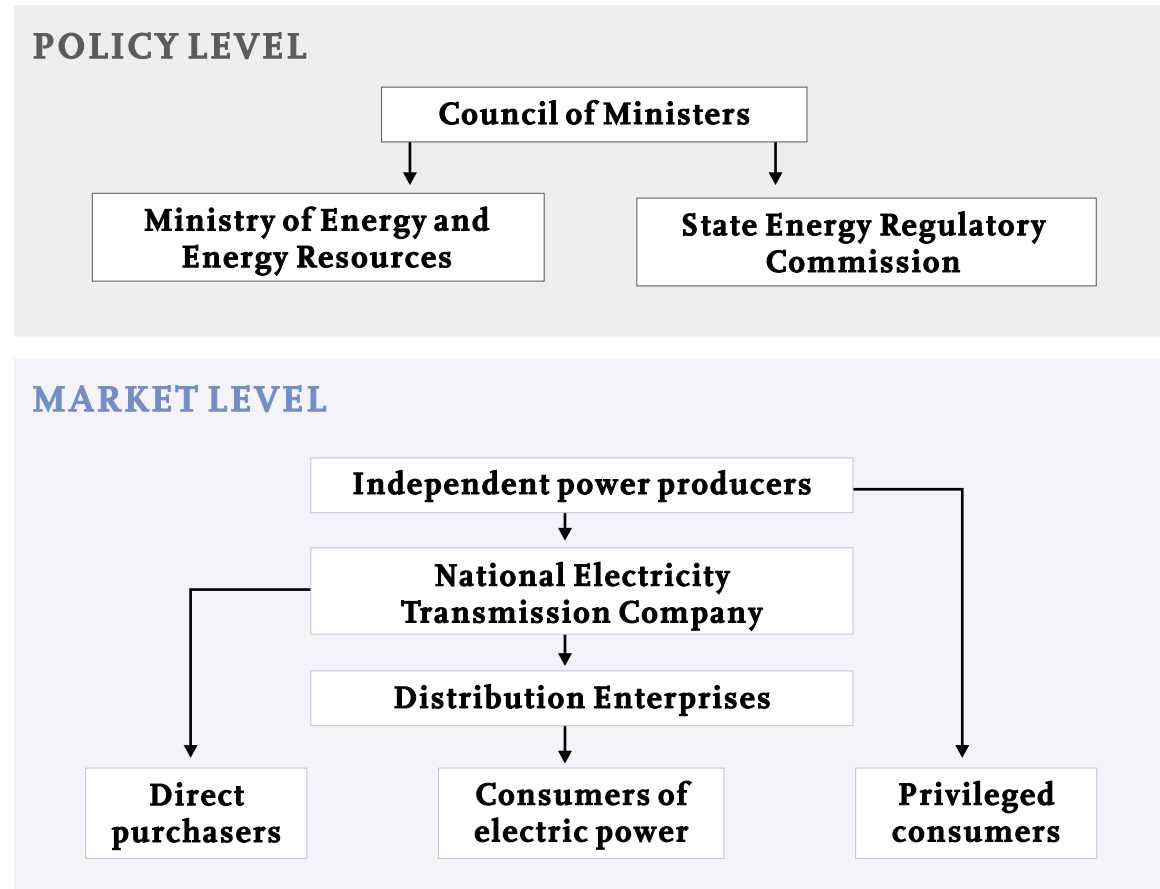
*The financial crisis and IMF conditionality as part of a stabilization package was a direct trigger for reforms in the energy sector.*

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Under this approach, the new public National Electricity Transmission Company would purchase electricity from the independent producers and sell it to the distribution companies, which would then sell it to consumers. In addition, the transmission company would be able to sell directly to large consumers connected to the high-voltage transmission network, and independent producers would also be able to sell electricity directly to “privileged consumers,” bypassing the transmission company. (See Figure 6.1.)

FIGURE 6.1

POST-REFORM DESIGN OF THE ELECTRICITY SECTOR IN BULGARIA



In order for this approach to work, the IMF further required that prices in the sector increase to cover the anticipated investment costs and provide a profit to private investors. Thus, by July 2001, the price for households and industries was to be equalized at 4 cents per kilowatt-hour—a considerable increase for households from the then-prevailing rate of 3.5 cents per kilowatt-hour and below.

The defining moment in the reform process came in July 1999, when an “Energy and Energy Efficiency Act” was passed in Parliament, fulfilling a key

condition of the IMF agreement. Soon thereafter, in September 1999, the State Energy and Energy Resources Agency (SAEER) replaced the earlier Committee on Energy. In addition, the State Commission on Energy Regulation was created as independent from the government regulatory body. It would be the Commission’s task to make decisions on prices, and on the issuing of licenses and permits, and to do so in an independent fashion, free from political interests (Republic of Bulgaria National Assembly, 1999).

## THE PROCESS OF REFORMS

Ensuring financial accountability was central to the initial reform design, which was shaped largely by the short-term economic crisis in the sector. Over time, a range of different actors and interests within and outside the government gradually asserted their influence, which led to an implementation trajectory somewhat at odds with the original design. In 2001, the election of a new government initiated a reexamination of the reform approach and renewed efforts to work with donor agencies. This section provides a sketch of the various actors and their motivations, and concludes with an assessment of reform implementation efforts thus far. A chronology of significant events is provided in Box 6.2.

### Governmental Actors

In the course of reforms, a range of governmental actors faced contradictory incentives that influenced, at different times, the pace and trajectory of reforms.

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*The extra-budgetary Energy Resource Fund provided an extremely useful political tool.*

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For the coalition government that came to power in May 1997, broad sentiments were in favor of reform. The government had been voted in on a platform of managing the fiscal and monetary crisis in the country. In the short term, this required not only reducing government expenditures by increasing prices and reducing subsidies, but more generally keeping the flow of IMF money coming by complying with IMF conditions, among them reform of the electricity sector. Moreover, the privatization of electricity generation facilities promised to bring in revenues. Finally, progress toward market-based reform brought political benefits in the form of progress toward integration with the EU.

These political motivations for the party in power were considerably undermined by other, quite

different motivations for politicians and bureaucrats with direct control over the resources in the energy sector. The extra-budgetary Energy Resource Fund provided an extremely useful political tool, free of parliamentary supervision. By allocating funds and subsidies, politicians could create or foster political allies, or defuse potentially dangerous situations. Since the reform measures were aimed at introducing financial transparency, reforms threatened to undermine a potent political tool.

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*Tariff increases carried enormous political dangers for the government in power.*

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In addition, while international donors would reward the government for progress on reforms, many of the same measures were sure to incite the wrath of the voting population. Tariff increases, a central component of reform efforts, carried enormous political dangers for the government in power. As a result, it consistently pressed the IMF to allow slower implementation of tariff increases and subsidy removal, leading to an ongoing tension in the reform process. In particular, the government aimed to manage this tension with targeted social assistance,<sup>8</sup> slower than planned price increases for households, and continued subsidies to the politically important district heating sector.

Moreover, several elements of the energy bureaucracy had a strong disincentive to slow or otherwise subvert reforms. With the implementation of reforms, bureaucrats had to deal with layoffs. Through manipulation of nontransparent funds, energy sector management stood to lose salaries that had been substantially insulated from the economic downturns that had damaged other sectors of the economy. In particular, the emergence of an independent agency charged with overall management of the sector threatened their interests.

In 1999, the government passed a “National Strategy for Development of Energy and Energy Efficiency until 2010.” This strategy envisaged a

**CHRONOLOGY OF ELECTRICITY SECTOR REFORM IN BULGARIA**

- October 1991 Law on Protection of the Environment.
- November 1991 Establishment of the Committee of Energy and the National Electric Company (NEK).
- December 1991 The European Energy Charter approved in The Hague.
- May 1992 Law on Transformation and Privatization of State and Municipal Enterprises.
- March 1995 Law on Ratification of UNFCCC.
- September 1996 Creation of Ministry of Energy and Energy Resources (Closing down of the Committee of Energy).
- May 1997 Three-Year Agreement with IMF creating conditions for long term financial stabilization and economic growth.
- May 1997 Creation of Committee of Energy to replace the Ministry of Energy.
- May 1997 Creation of National Agency for Energy Efficiency.
- July 1997 Implementation of Currency Board in Bulgaria as a result of agreement with IMF.
- August 1998 Approval of a Plan of Action for Restructuring, Abolishment of Subsidies, and Financial Rehabilitation of the Commercial Societies in the Energy Sector during the Period 1998–2000.
- March 1999 Decision by the National Assembly on the National Strategy for Development of the Energy Sector and Energy Efficiency until 2010.
- July 1999 Energy and Energy Efficiency Act.
- September 1999 Decree 179 of the Council of Ministers on the Transformation of the Committee of Energy into State Agency for Energy and Energy Resources.
- September 1999 Decree 180 of the Council of Ministers on the Transformation of the National Agency for Energy Efficiency into State Agency for Energy Efficiency.
- April 2000 Decree 181 of the Council of Ministers on the creation of a State Commission on Energy Regulation.
- August 2000 Restructuring of the National Electric Company and registration of independent electricity producers and distribution companies.
- July 2001 Approval of a Strategy for Development of District Heating during the period 2000–2005.
- February 2002 Election of a new Government of the National Movement Simeon II.
- February 2002 Closing of the State and Energy Resources Agency and approval of the Statutes of the Ministry of Energy and Energy Resources.
- March 2002 Transformation of the State Energy Efficiency Agency and approval of the Statutes of the Energy Efficiency Agency.
- March 2002 Release of an Energy Strategy for the Republic of Bulgaria by the Ministry of Energy and Energy Resources.

considerable increase in new hydro, nuclear, and thermal supply capacity. This projection was based on the assumption that existing industrial capacity was being underutilized, and that demand for electricity by both industrial and household segments would increase by 5 percent a year as the economy returned to pre-1990 levels (Republic of Bulgaria Council of Ministers, 1998b). Moreover, the strategy assumed a considerable electricity shortage in the region. Consequently, a substantial motivation for new generation capacity was to develop Bulgaria as an electricity exporter. This policy had considerable implications for the reform process.

For two principal reasons, the evidence suggested that Bulgaria would not be well-positioned to turn a profit from electricity sales. First, with the exception of Turkey, other countries in the region had only a temporary shortage of electricity. This suggested that Bulgaria would not be able to command a premium price.<sup>9</sup> Second, low-price production depended on a stable supply of low-cost imported fuel. This situation could not be expected to continue as Bulgaria's fuel suppliers liberalized their own energy sectors. Nonetheless, elements within the electricity bureaucracy and the government as a whole saw a future for Bulgaria in the electricity markets, and were determined to forge ahead with this vision. Their main arguments were that exports would allow the country to retain substantial generation capacity until domestic demand increased, and that electricity was the only commodity that Bulgaria could competitively export, at least in the short term.

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*Energy sector management stood to lose salaries that had been substantially insulated from the economic downturns.*

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In 2002, there was a sharp change in direction. Following the election of a new government, the reconstituted Ministry of Energy and Energy Resources (formerly SAEER) drafted a new and considerably different "Energy Strategy of Bulgaria." This Strategy emphasized that Bulgarian energy had to be

competitive on the Balkan market, placed a high priority on energy efficiency, and emphasized the need for a strong regulator as a precondition of establishing a market framework (Ministry of Energy and Energy Resources, 2002). The 2002 Strategy noted that the earlier 1999 Strategy took for granted growth in household consumption, and failed to apply a proactive approach to energy efficiency. The 2002 Strategy aimed to correct these shortcomings.

## International Financial Agencies

With its central role in designing a macroeconomic stabilization program, the IMF was initially the most significant donor agency shaping the electricity sector in Bulgaria. The IMF advocated price increases; strong regulatory development to keep price-setting independent; dismantling of NEK's monopoly; privatization; and removal of subsidies. The IMF agenda was supported by other donors such as the World Bank (Tellam, 2000).

A substantial triumph for the IMF, and a positive outcome for transparency in the sector, was the abolishment of the Energy Resource Fund—the primary mechanism for nontransparent financial management. At the insistence of the IMF, the 1999 Law on the State Budget abolished the numerous existing extra-budgetary funds, and the money was remitted to the state budget (Republic of Bulgaria National Assembly, 1998). At the same time, the IMF's insistence on closing extra-budgetary funds also had unfortunate side effects. A Fund for Energy Efficiency Projects was dismantled, cutting off the only source of funding for energy efficiency in the country, with no provision made for pursuing these projects through more transparent means. Eliminating the extra-budgetary funds, however, did not eliminate the subsidies for which they were used—primarily for district utilities.

The government and the IMF have had two substantial differences in implementation of the reform process. First, the IMF was very clear that they foresaw unbundling of NEK only after a clear legal and regulatory framework for the sector had

been put in place.<sup>10</sup> Based on accounts of reform elsewhere, this sequencing is necessary, and the condition imposed by the donor agencies is a sound one. Second, the IMF was strongly opposed to the government's decision to freeze electricity and district heating prices for households until the end of 2001. From the IMF's perspective, the freeze in prices risked reducing the "trust in the commitment of the Government to equalize the prices for households and industry; it will reduce NEK's profit and...will undermine the governmental plan for privatization of the generation and distribution components of NEK" (Kahkonen, 2000). From the government's point of view, price increases imposed a high social cost, one that also risked a political backlash.

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*While reforms were certainly undertaken at the behest of the IMF, it had limited control over the subsequent implementation process.*

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Despite these concerns, the President of SAEER had already signed the orders for the separation of seven electricity distribution branches and four thermal power plants, together with the Kozloduy nuclear power plant. What was left of NEK after this unbundling was registered as a single-buyer transmission company. These changes occurred well before regulatory arrangements were satisfactorily in place. Hence, while reforms were certainly undertaken at the behest of the IMF, it had limited control over the subsequent implementation process.

During the initial stages of electricity reform, the World Bank was a junior partner to the IMF. More recently, it has taken the lead in engaging the government on sector reforms. The opening for the World Bank to re-enter the process came through an IMF condition that required the Government of Bulgaria to present a suitable law on energy sector reform to Parliament. The World Bank offered assistance in preparing this law—a process that began in October 1998. While the government proved initially reluctant to accept World Bank engagement, the Parliament proved more forthcom-

ing.<sup>11</sup> From a World Bank perspective, initial drafts of the law had considerable flaws, including a continued supply orientation, maintenance of NEK as a vertically integrated monopoly, and the continued subjugation of the Energy Commission to the Energy ministry.<sup>12</sup> In addition to the World Bank, USAID played an important role in providing legal assistance with drafting the law.

The World Bank has most forcefully articulated a concern that the Bulgarian government's efforts to build new capacity through Independent Power Producers (IPPs) casts a long shadow over reform. Together with the IMF, the World Bank has expressed fears that in the case of default, the government would be exposed to severe liabilities. In addition, the World Bank has argued that the projects are unnecessary, and questioned their financial viability.

These points have been made in the context of an "Energy–Environment Review" in Bulgaria, which was first reviewed by the government in November 2000 and subsequently published in February 2002. This is the first study to deal explicitly with the impact of reforms on the environmental profile in the sector. The report develops a scenario based on energy efficiency, which envisages, among other things, preferential dispatch of "green" power. Under this scenario, the life of nuclear units would not be extended, electricity exports would be limited, and the investment program of NEK would be reviewed and potentially halted. Based on this and other such analyses, the most incendiary conclusion of the paper is that Bulgaria does not need new generation capacity in the coming years, in complete contradiction to the government's own original 1999 Strategy document.

The IMF agreed with the World Bank that new power projects were undesirable. Yet, once it became clear that the government was proceeding with new deals, the IMF appeared to soften its disapproval. This accommodation may have been influenced by the near conclusion of its three-year agreement with the government, and the need to negotiate a new agreement. Thus, the government and its two major international financing institutions were sending contradictory and confusing messages.

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*The most incendiary conclusion of the World Bank's "Energy-Environment Review" is that Bulgaria does not need new generation capacity.*

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The World Bank has also prepared the only study that estimates the cost of meeting various environmental commitments. A draft of the study—"Environment Sector in Bulgaria: The Challenge of Preparing for EU Accession"—was completed in March 2000. The results are sobering. In the electricity sector, the study estimates price increases between 240 and 300 percent to cover necessary environment-related investments.

Both these studies provided useful information and analysis. However, they came late in the reform process. By the time the studies were released, NEK had already been unbundled, and the government had committed to new generation capacity. Had such convincing studies on alternatives to new capacity and the social cost of reforms been available early in the reform process, the information would have been far more likely to shape both the weight given to energy efficiency and the role of new capacity.

With the election of a new government in 2000, the World Bank has taken an active role in preparation of an ambitious \$450 million "Programmatic Adjustment Loan" (PAL) for the electricity sector.<sup>13</sup> This loan will likely focus on tariff reform, regulatory measures, privatization, and social protection. As the World Bank has taken the lead in shaping donor approaches to the sector, the IMF has increasingly aligned its own recommendations with World Bank prescriptions for the sector, reversing the dissonance that characterized donor interaction with the government in the late 1990s.<sup>14</sup>

## **Transparency and the Scope for Participation in the Reform Process**

The reform process in Bulgaria has been almost entirely a government-led affair. Debate has been

conducted between government agencies and donor institutions, primarily the IMF. Within the government, SAEER has played a dominant role. In the latter stages of implementation, SAEER has been making decisions independent of donor agency views.

The government has published some information on the reform program, but it has been incomplete and allowed few opportunities for debate. For example, it released a "Program for the Restructuring of NEK," along with a calendar of achievements and regulations for implementation of the Energy and Energy Efficiency Law. However, prior to its enactment, the law was not available for public viewing or comment.

Within civil society, the most vocal actors were the trade unions in the energy sector. The unions stood to suffer considerable losses as a result of the reform process. In a letter to Parliament, the Prime Minister, and the Deputy Prime Minister, these unions critiqued the reform model being proposed by SAEER, charging that several of the measures ran the risk of bankrupting the sector, causing further loss of jobs (*Pari Daily*, 2000). However, the unions took no further steps; in particular, they made no effort to combine forces with other concerned citizens. That such alliances are possible is demonstrated by the example of South Korea. (*See Box 6.3.*)

Consumer groups and other NGOs with concerns larger than those of sector employees have played a far more muted role. Some energy efficiency and environmental NGOs have provided technical comments to the initial drafting stage of the law, but have been little engaged in the implementation process. From the point of view of consumer groups, the rise in energy prices is of considerable concern. Despite the significant social costs of reforms to consumers, however, there has been little mobilization around this issue, in part because the government has postponed difficult decisions through a price freeze. There are primarily two reasons for the modest role NGOs and other public interest groups have played in the reform process or in mobilizing public opinion. First, few NGOs in Bulgaria focus on

**BOX 6.3****ELECTRICITY SECTOR REFORMS IN SOUTH KOREA: PROSPECTS FOR A RED-GREEN ALLIANCE?**

South Korea embarked on a comprehensive program of electricity sector reform in 2000. A restructuring act created a power trading market, a new regulatory body, and led to the unbundling of the Korea Electric Power Corporation (KEPCO). KEPCO's generation assets are to be sold off, with the significant exception of hydro and nuclear assets. Privatization of distribution is tentatively expected in 2003. By 2009, retail competition is envisioned.

While these changes were promoted internally as a way of enhancing economic efficiency, the immediate cause of reform was the Asian financial crisis of 1997. Revenues from the sale of generation assets and shedding of KEPCO's own debt were needed to stave off looming problems.

The reform process has unveiled some intriguing political arrangements between labor unions and environmentalists. The Korean National Electrical Workers Union (KNEWU), fearing layoffs and job insecurity, initially opposed restructuring and privatization, and even thwarted passage of relevant legislation in 1999. Ultimately, however, KNEWU did strike a compromise with KEPCO management, and tacitly agreed to the first stage of reform plans—separation of the thermal power sector from KEPCO. Workers in the generation units objected to this compromise, and split off into a separate union—the

Korean Power Plant Industry Union (KPPIU). KPPIU has joined hands with unions in other industries to oppose privatization. KNEWU and KPPIU each joined rival umbrella union organizations.

Environmentalists in South Korea have largely been supportive of a transition from a monopoly utility to a system based on competition. In particular, they hope that market discipline will slow prospects for the capital-intensive nuclear power plants hitherto favored by KEPCO, environmentalists envision a system that increases environmental protection, local participation, and energy self-reliance.

These views initially pitted labor and environmental groups against each other on the question of privatization. Over time, however, both sides have made efforts to reconcile their differences. A network of progressive intellectuals, the Council of Professors for Democratization (CPD), has provided a forum for dialogue between the groups. At the request of the umbrella union to which KNEWU belongs, CPD conducted a year-long study of the impacts of privatization on the electricity sector. Included were academics as well as labor unions and environmental representatives.

The debate has brought the positions of the two sides closer. Labor unions have incorporated public

the intersection of energy and environment, and none has the ability to support an informed public dialogue on such a complex issue. Second, little information was available to the public. There was no mechanism for public input on energy pricing, social outcomes and necessary safety nets; on reform objectives and the process to achieve them; on national goals for development of the energy sector; and on other major decisions with significant environmental and social outcomes.

### **Initial Outcomes**

The reform process has proceeded more slowly than planned. The government's understandable concern about raising prices too far too fast, and the contradictory interests within various government agencies, including a concern that reforms be made irrevocable before elections, have shaped the halting progress of reforms. Since the initial agreement, this unsteady progress has caused significant tension

BOX 6.3 (CONTINUED)

benefits concerns such as price hikes, cutting of public benefit programs, and difficulties in regulating powerful private companies post-privatization. Environmentalists have expressed sympathy for broader initiatives against the undermining of national authority by global forces, while noting that the environmental case for the electricity sector argues for market discipline. They also cautioned against a rosy view—then prevalent among labor groups—of the past achievements of state-owned corporations like KEPCO.

Ultimately, agreement on a proposal for restructuring sponsored by environmentalists failed to win agreement from labor unions over the issue of privatizing nuclear power. Environmentalists supported it and labor groups were strongly opposed. While the CPD-led process did not lead to a common platform, the experience led to each adopting positions that were more sensitive to the concerns of the other. Unions now stress the need to democratize the governance of the sector. Environmental groups acknowledge the danger that reform could create ungovernable private oligarchs, and have focused their efforts on decentralized power options and incorporation of environmental standards. A lesson from the Korean experience with a red-green alliance is that while the interests of each group are considerably opposed, there is

certainly space to forge coalitions. At minimum, the effort has resulted in greater mutual appreciation of the broader challenge of creating a responsible and beneficial electricity sector.

Sources:

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with the IMF. Despite its leverage, the IMF has ultimately accepted the government's decisions. Two specific interim outcomes threaten to have considerably negative long-term impacts on reforms.

First, NEK was dismantled well before institutional and regulatory capacity was created and put in place in the sector. In part, this was likely because the government sought to make reforms irreversible before the elections in 2001. While this reverse

sequencing was in direct opposition to donor requirements, the donor agencies ultimately chose not to question the decision. However, the lack of a regulatory framework created an ambiguous environment for operation of the newly unbundled entities, and did not provide the clear signals necessary for them to operate on a commercialized basis. If privatization proceeds under these circumstances, there is considerable potential for manipulation of the privatization process for both financial and

political gain. In recognition of these problems, the Ministry of Energy and Energy Resources' March 2002 Strategy document explicitly recognizes the problem of unbundling before undertaking regulatory reform.

Second, the momentum toward new thermal power capacity—at Maritsa-Iztok 1 and 3—prior to the restructuring of NEK is a cause for concern. The contract proposed would oblige NEK to purchase electricity on a “take or pay” basis, forcing it to bear the risk of a downturn in demand for electricity. The price at which this electricity will be purchased is kept confidential. That the contract is for a 15-year period contradicts the spirit of the reforms, which are intended to shift the sector toward a more competitive structure. The government currently anticipates that the electricity will be exported to Turkey. However, based on estimates of generation costs and the likely price of power exports once the market is fully liberalized and linked to the European grid, there is a high likelihood that the electricity will be sold at a considerable loss. If this does prove to be the case, Bulgarian consumers, who are already struggling under a heavy price burden, will effectively subsidize cheap exports to Turkey. The reform model squarely puts the burden on the small consumer, since “privileged” consumers such as large industrial facilities can buy directly from producers at competitive prices, depriving the distribution companies of their most lucrative customers. Consequently, the distribution network may have to pass on the costs of more expensive supply to small consumers and households. In brief, the public sector and ultimately the small consumers in Bulgaria bear the project risks, while private sector partners and the importing country stand to benefit.

## ENVIRONMENTAL AND SOCIAL CONCERNS

Until 2001, there has been little evidence in the reform process of attention to either environmental or social outcomes. This is despite substantial international pressures on Bulgaria to meet environmental targets, and despite palpable evidence that the

reform process is extracting a considerable social cost on the most vulnerable.

The design and implementation of reforms has not led to the emergence of any domestic champions for environmental concerns. The plans for restructuring and privatization were drawn up prior to the World Bank studies on energy and environment completed in 2000. Consequently, reform design was drawn from the decade-old World Bank studies, which concluded that market reforms would automatically result in environmental improvements. The possibility that reform processes might undermine efforts at environmental improvements was not considered or mitigated. For example, the possibility that creating seven separate distribution companies could substantially complicate implementation of end-use efficiency programs has not been considered. Nor was any systematic treatment given to the scope for pursuit of renewable energy options in the reform process.

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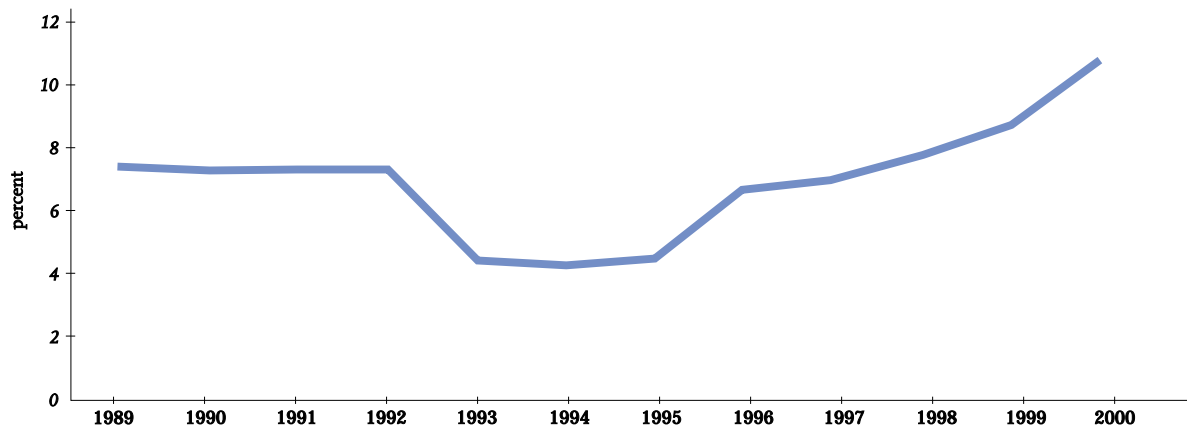
*The reform model squarely puts the burden on the small consumer.*

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If fully implemented, the government's original 1999 Strategy document, which focused on supply expansion, would have likely had negative environmental implications. The 1999 Strategy was based on the assumption that the expected economic recovery would lead to demand comparable to pre-1989 levels, and on a vision of Bulgaria as a major energy exporter. This approach placed limited effort on supply and demand efficiency. Currently, even the existing funds for energy efficiency projects have been lost as part of the program of fiscal transparency. As examples from other Central and Eastern European countries indicate, sector and macroeconomic reform provide incentives for energy efficiency in the privatized industries, but they are not equally effective in the public sector or with households. Special instruments such as earmarked funds and soft financing are needed to introduce energy efficiency measures (Regional Environmental Center

FIGURE 6.2

## ENERGY COSTS AS A SHARE OF HOUSEHOLD EXPENDITURES IN BULGARIA



Source: National Statistical Institute, 1993–2000.

for Central and Eastern Europe and the World Resources Institute, 2001).

Late in the reform process, the World Bank emerged as a strong advocate for increased efficiency, and has demonstrated that efficient use is an alternative to rampant expansion of supply potential. However, this effort has come late in the process, and until recently this message has had little domestic support. A focus on energy efficiency has been a politically inconvenient message, since it threatens to undermine the interests of those who advocate continued capacity expansion. A domestic political constituency for energy efficiency is necessary to counter the influence of forces supporting enhanced supply. Fortunately, early signs from the new government, as suggested by the emphasis on energy efficiency in the 2002 Energy Strategy, suggests that such a constituency may in fact be forming.

The approach to social issues has followed a similar trajectory. Despite indications of a serious social problem, no assessments or forecast of the social burden of reforms were initiated in the early stages

of reform. The early evidence suggests that reforms in the electricity sector will substantially increase both electricity and district heating prices for households. Since the initiation of reforms, household budgets for energy have steadily increased, rising from a 7 percent share in 1996 to 11 percent in 2000. (See Figure 6.2.) The burden is heaviest for the poorest households. For example, old-age pensioners paid an average of 14 percent of their household budget on energy costs, the second largest category of household expenditure (Dimov, 2000).

For several years, the government's approach has been to postpone seeking a solution, or to seek short-term fixes. In order to put the sector on a sound financial footing, the IMF has relentlessly urged price increases, but without providing any solution to the social cost of price these increases. The government negotiated a freeze on electricity and district heating prices with the IMF for two years beginning in 2000. Moreover, it has instituted a program for targeted energy support during the cold season, which was extended to a substantial 19 percent of households (12 percent of the population) (Dimov

2000). This is clearly a long-term problem not amenable to a short-term fix, as indicated by the fact that energy prices in Bulgaria are rising toward Europe-wide prices as the country increasingly seeks to integrate its markets, yet Bulgarian incomes are around 30 percent of European incomes. Hence, for a large segment of the population, energy costs are likely to be a considerable burden for some time to come.

In the Bulgarian context, the link between social and environmental outcomes is particularly apparent. End-use efficiency and household conservation efforts could bring substantial social benefits by buffering the cost of energy price increases, even while providing environmental benefits. Hence, greater efficiency provides a positive link between environmental and social outcomes. The potential negative linkages are also clear. For example, with rising district heating prices, many consumers have disconnected from the system, calling its financial viability into question. Instead, customers have switched to electricity for heating since it allows them to control their heat use and associated expenses. The environmental cost of this switch is significant, since district heating is based on natural gas combustion, while a considerable share of electricity is generated from coal.

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*A domestic political constituency for energy efficiency is necessary to counter the influence of forces supporting enhanced supply.*

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More recently, the World Bank's preparation of an adjustment loan seeks to build on its studies demonstrating the considerable benefits of energy efficiency on both social and environmental grounds. In addition, the World Bank has revived earlier projects to rehabilitate the district heating system in major cities. Hence, there are signs that environmental and social factors may yet receive explicit attention.

In sum, despite the considerable environmental and social stakes in the reform process, successive

governments throughout the 1990s made little effort to assess the implications of electricity sector reforms on these broader concerns. Among donor agencies, the IMF has maintained its support for the rapid introduction of market prices. The World Bank advocated attention to energy efficiency and social protection, but only after the government's initial round of reform design and implementation. The slow pace of reform, combined with a new government, may yet provide an opportunity to correct the earlier inattention to public benefits in the reform process.

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*Greater efficiency provides a positive link between environmental and social outcomes.*

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## CONCLUSION

It took a crisis situation for reforms in the electric power sector to be undertaken in Bulgaria. Efforts at reform funded by a range of donor agencies in the early 1990s resulted in a series of technical studies, but few actual steps in this direction. Only pressures from the IMF led the Bulgarian government to take serious steps toward reform. However, in a crisis context, the Bulgarian government had limited ability to frame the approach to reform, which was largely dictated by the IMF's concern with financial transparency, introduction of commercial principles in the sector, tariff increases, and ultimately privatization.

Once in the implementation stage, domestic actors and particularly the SAEER (the former Committee of Energy) reasserted their authority, but not necessarily in the public interest. Reform implementation led to a flawed sequencing of reform, where unbundling was given priority over establishment of an institutional framework. Moreover, the government's supply orientation and preoccupation with developing an export market for electricity continued unabated. Despite donor leverage in the initial stages, the IMF in particular was unable to change the government's course in these two important areas.

Neither the government nor donor agencies brought sufficient attention to bear on concerns of public benefits in the design stage of the reforms. In the midst of a financial crisis, the IMF sought attention to the financial dimensions of reform. While well aware of the social costs of tariff increases, the IMF made no attempt to examine ways of insulating the population in the long run from the social costs of price increases. While the World Bank had conducted studies of environmental issues in the sector in the early 1990s, there is little evidence that these studies shaped the design of reforms carried out in the late 1990s. Through subsequent studies, the World Bank did criticize the government's supply-oriented mindset obliquely through the avenue of environmental concern, by demonstrating the potential of greater efficiency to obviate the need for supply increases. By the time this and other important new studies on the environmental and social dimensions of reform were complete, however, political momentum had increased in favor of supply expansion. However, the election of a new government and the preparation of a World Bank loan for structural reform provide scope to change course, and World Bank studies on the energy-environment link may yet prove to be a useful tool.

The experience in Bulgaria also calls into question the effectiveness of coordination among the donor agencies. While the World Bank was active in the sector in the early 1990s, there is little evidence that this knowledge played a role in shaping IMF-led reforms a few years later. Moreover, two years into reforms, there was a growing wedge between the positions of the two institutions, as the IMF accepted the government's interest in developing new capacity through joint ventures, while the World Bank continued to find fault with this approach. Only in 2001 did the two institutions better coordinate their message to the government.

Among public benefit concerns, social issues are at the top of the political agenda. Price increases in electricity and in district heating are the greatest public concern, and also occupy the political attention of the government. While environmental issues are of significant international concern, particularly

given environmental standards necessary for EU accession, they have not risen to an equivalent level of political importance.

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*Bulgarian reforms call into question coordination among donor agencies.*

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Neither social nor environmental concerns have been articulated in open debate over reforms. Indeed, reforms have been dominated by a small group of government bureaucrats and donor agencies, with little scope for public debate. The lack of open debate through the 1990s may have contributed to glaring disconnects in the reform process, such as that between the goal of increasing commercial discipline and the government's insistence on new capacity addition for exports, which appeared doomed to be loss-making. With the reform process having entered a new phase in 2001, there is still time for a supply-driven approach to reforms to give way to one motivated by concern over the broader public interest, and for more attention to be paid to the considerable potential for social and environmental gains from energy efficiency in Bulgaria's electricity sector.

## NOTES

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2. The effects of this stabilization program can be traced through data produced by the National Statistical Institute (1993-2000).
3. Calculated by Doukov from National Statistical Institute (1993-1997).
4. See, for example, European Parliament (1997), which states that "Integrated electricity undertakings shall, in

their internal accounting, keep separate accountings for their generation, transmission and distribution activities.”

5. Interview with former government bureaucrat, August 2000. All interviews for this chapter were conducted on a not-for-attribution basis. Consequently, interviewees are identified only by their institutional affiliation.
6. See European Union Electricity Directives: Resolution 98/C4/01 (18 December 1997); COM(97) 599; Decision 99/21/EC, Decision 96/737/EC; Decision 2000/646/EC.
7. Republic of Bulgaria Council of Ministers (1998a) envisions decommissioning of Units 1 and 2 of Kozloduy nuclear power project in 2004 and 2005. According to the Memorandum signed on November 29, 1999 between Bulgaria and the European Commission it has been agreed that the decommissioning of Nuclear Units 1 and 2 of Kozloduy NPP should be carried out by 2003.
8. For example, in 1999, targeted assistance was extended to 19% of households, or 12% of the population, indicating the large segment of the population that requires assistance for basic heating.
9. Interview with World Bank official, April 14, 2000.
10. This was clearly stated in a Memorandum between the Government of Bulgaria and the IMF, February 2000. Also see *Capital Newspaper* (2000).
11. It is relevant here to note that the Chairman of the Energy Committee in Parliament was not from the ruling party.
12. Interview with World Bank staff member, April 14, 2000.
13. Personal communication, World Bank staff, April 2002.
14. Personal communication, World Bank staff, April 2002.

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