Energy in Europe and Central Asia

A Sector Strategy for the World Bank Group

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Energy in Europe and Central Asia

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Laszlo Lovei

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This document was prepared by Laszlo Lovei, Lead Specialist (Energy Unit, Europe and Central Asia Region, International Bank for Reconstruction and Development), with input from Clive Armstrong, Senior Economist (Oil, Gas, and Mining Department, Office of the Director, International Finance Corporation), Mark Segal, Senior Economist (Power Department, International Finance Corporation), and Stine Andresen, Senior Guarantee Officer (Guarantees Unit, Multilateral Investment Guarantee Agency), under the general guidance of Hossein Razavi, Director (Energy Unit, Europe and Central Asia Region, International Bank for Reconstruction and Development), and Johannes Linn, Vice President (Europe and Central Asia Region, International Bank for Reconstruction and Development).
FOREWORD

This report outlines a strategy that maximizes the impact of World Bank Group activities on development of the energy sector in the Europe and Central Asia (ECA) region in the period 1998-2001. The strategy involves adjusting the World Bank Group's mix of products and services to changing client needs, placing more emphasis on emerging topics, and ensuring the consistency of the activities of the International Bank for Reconstruction and Development (IBRD), International Development Association (IDA), International Finance Corporation (IFC), and Multilateral Investment Guarantee Agency (MIGA). The paper is also intended to increase the awareness of Country Directors and key Country Unit staff about energy sector issues in the ECA region.

This report is the result of a collaborative effort of the energy sector staff of the IBRD, IFC, and MIGA. It also reflects conclusions reached at an internal review meeting held March 24, 1998 and comments made at an external workshop held May 29, 1998. Workshop participants included about 50 representatives from client countries, international lending institutions, multi- and bilateral development agencies, multinational energy companies, and nongovernmental organizations. In addition to helping improve the proposed strategy, the workshop provided an opportunity to strengthen the partnerships that are essential to successful implementation of development activities in the region.

The IBRD Energy Sector Unit for the ECA region, with input from IFC and MIGA staff, will briefly evaluate the progress achieved in implementing the strategy at the end of each fiscal year. Chapter V presents a "scorecard" that will facilitate the evaluation. A more thorough evaluation is planned at the end of FY01, followed by a comprehensive update of the strategy paper in early FY02.

Hossein Razavi
Director
Energy Sector Unit
Europe and Central Asia Region
ABSTRACT

Many countries in the Europe and Central Asia region have excess production capacity in the energy sector, the region is well-endowed with fossil fuel reserves, and energy demand has been decreasing since the late 1980s. However, the quality of energy supply and the efficiency of energy consumption is low in most countries in the region, energy subsidies and tax arrears create fiscal imbalances threatening macroeconomic stability, and the poor environmental performance and safety record of energy producers pose a danger to the lives and health of the population. While the need for reform to address these problems is widely accepted in the region, what governments see as the maximum pace at which they can restructure their economies heavily influences reform and adjustment in the energy sector. Even in countries where energy sector adjustment is likely to have only a modest negative social impact, the task of building and maintaining a strong reform alliance able to overcome vested interests is particularly difficult.

Four main objectives underlie the World Bank Group’s strategy in the energy sector in the region: (1) assisting governments to protect the public interest through improved regulatory regimes, demonopolization, better environmental performance, and transformation of the energy sector from a net user to a net provider of budgetary resources while maintaining/restoring its liquidity; (2) supporting economic transition through the financing of rehabilitation and strengthening of energy supply facilities where other sources of financing are not (yet) available, and mitigating the negative social impact of sector restructuring; (3) facilitating private investments to improve the quality of energy services, and, through guarantees, B loans, and other financial instruments, increase the efficiency and reduce the cost of energy production and consumption; and (4) promoting regional initiatives to increase energy trade and facilitate the sharing of information and experience among countries in the region. Reduced environmental pollution, improved regulation, and establishment of the technical and institutional infrastructure that energy markets need to function well have strong public good characteristics. The World Bank Group will assist all countries interested in receiving support to pursue these objectives. In addition, in countries where private interest in the energy sector is low but investment needs are substantial, the World Bank Group will finance rehabilitation projects and needed restructuring. In countries that are well along with their transition, World Bank Group activities will focus on facilitating private investments.
ABBREVIATIONS AND ACRONYMS

ADB  Asian Development Bank
CAS  Country Assistance Strategy
CHP  Combined Heat and Power
DH   District Heating
EBRD European Bank for Reconstruction and Development
ECA  Europe and Central Asia
ECSEG Europe and Central Asia, Energy Unit
ECT  Energy Charter Treaty
EIB  European Investment Bank
ESCO Energy Service Companies
ESMAP Energy Sector Management Assistance Program
EU   European Union
FSU  Former Soviet Union
GEF  Global Environment Facility
IBRD International Bank for Reconstruction and Development
IDA  International Development Association
IDF  Institutional Development Facility
IFC  International Finance Corporation
IMF  International Monetary Fund
MIGA Multilateral Investment Guarantee Agency
MOU Memorandum of Understanding
NGO Nongovernmental Organization
OPIC Overseas Private Investment Corporation
PCF  Prototype Carbon Fund
PHARE Poland and Hungary Assistance for Economic Reform
REEF Renewable Energy Efficiency Fund
SAL  Sector Adjustment Loan
SECAL Coal Sector Adjustment Loan
TACIS Technical Assistance to the Commonwealth of Independent States
UK KHF United Kingdom Know How Fund
US AID United States Agency for International Development
WBG  World Bank Group
CHAPTER I. CLIENTS AND PARTNERS

This chapter discusses the energy sector in the Europe and Central Asia region, touching on both the endowments and challenges, and on the trends, threats, and opportunities in the next three to five years. It also looks briefly at the organizations other than the World Bank Group that have been or are likely to be active in supporting reform of the energy sector in the region.

Overview of the Region

It seems unlikely that energy problems would rank high among the challenges that countries in the Europe and Central Asia region face. Many countries have excess production capacity in the energy sector, the region is well-endowed with fossil fuel reserves, and energy demand has been decreasing since the late 1980s. But most of the countries in the region have major deficiencies in their energy production and consumption that negatively affect the rest of the economy:

- The quality of the energy supply is low, the result of inadequate working capital and obsolete fixed assets. High fluctuations in frequency and levels of voltage force customers to buy costly devices to protect computers and other sensitive equipment. The fluctuations also inhibit trade in electricity. Rotating electricity blackouts in the former Soviet Union affect paying and nonpaying customers alike. These problems in turn are hampering modernization of the region’s economies.

- Even though industrial energy prices have risen to international levels, the energy intensity of industrial production in the Europe and Central Asia region remains significantly higher than elsewhere, a situation that leads to low industrial competitiveness. Polish and Ukrainian steel mills, for example, use 25-50 percent more energy per ton of steel than do mills in Western Europe.

- Subsidies to energy producers and consumers contribute to fiscal imbalances that threaten macroeconomic stability. An example is Ukraine’s coal industry, which receives an annual subsidy from the budget of almost US$1 billion.

- Despite large reserves of hydrocarbons, revenue from exports is low, so that many countries cannot exploit their full potential for economic growth. A case in point is Azerbaijan’s oil industry, which generates one-sixth the taxes that are possible with higher oil production.

- The poor environmental performance and safety record of the energy sector pose a danger to the lives and health of the population. In the 1980s children living in cities with heavy traffic in Central Europe scored four intelligence quotient points lower than other children because of atmospheric lead concentrations from gasoline. In the city of Volgograd, Russia in the early 1990s the mortality risk from emissions of airborne particulates (PM10) from large and small combustion sources was estimated...
at 2,700 additional deaths per year. The Chernobyl nuclear accident has led to a severalfold increase in the incidence of childhood thyroid cancer in Belarus and Ukraine.

The solutions to these problems are clear and widely accepted at a general level—establish an enabling environment that will attract foreign investments and related modern technology and know-how, introduce market-based energy prices and hard budget constraints to stimulate energy savings, promote of exports of oil, gas, and electricity, replace consumer subsidies with targeted social protection schemes, shut down activities running at a loss, and clean up production processes. Few countries, however, have managed to make progress in all areas, and opinions about the optimal speed of change and approaches to implementation differ widely in the region:

- Some countries quickly introduced prices that cover costs and aggressively attacked the problem of low discipline in the collection of payments. Other countries adopted gradualist strategies, choosing to stretch the adjustment over several years.
- A number of countries recognized that privatization is the key to introducing modern technologies and know-how. Others preserved the role of the state as the dominant owner of major segments of the energy industry.
- Approaches to privatization have varied greatly. Poland and Ukraine put privatization at the end of the reform process. Russia and Kazakhstan privatized first and developed a regulatory framework afterwards. Hungary and Kazakhstan targeted strategic investors, whereas Russia and Ukraine transferred a major share of energy sector assets to managers and workers through privatization vouchers.
- The differences across energy subsectors are equally striking. Many countries have recognized that competition among solid and liquid fuel suppliers is essential to ensure quality services for customers. Only a few countries have started creating a framework for competition among electricity and natural gas suppliers.

What governments in the region see as the maximum pace at which they can restructure their economies heavily influences reform and adjustment in the energy sector. Reform often is competing with fiscal adjustment, restructuring of the financial sector, and other reform initiatives. Even in countries where energy sector adjustment is likely to have only a modest negative social impact, the task of building and maintaining a strong reform alliance able to overcome vested interests is particularly difficult.

Key Features by Country Groups

The countries in the region can be divided into four groups, whose key features are as follows:

- **Belarus, Bulgaria, Moldova, Romania, Russia, and Ukraine.** This group of countries is characterized by relatively high energy consumption per capita and large distortions in the prices of energy. Gas plays a major role in the economy and politics of all countries except Romania. The governments are ambivalent about reform, and
their efforts to establish competitive markets and independent regulatory bodies have been half-hearted. Noncash payment methods are widely accepted (particularly in the former Soviet Union). The governments frequently use the energy sector as an extension of the safety net to cushion the impact of macroeconomic stabilization and structural adjustment on enterprises, workers, and the population at large, without any compensation from the budget. The result is extreme decapitalization of energy enterprises in countries that have no surpluses to export. In Russia, energy companies tend to pursue monopolistic practices and resist the release of accumulated financial resources to the budget. The inflow of foreign capital into the energy sector is minimal, although some increase is expected as privatization moves forward.

- **Albania, Armenia, Bosnia, Croatia, Georgia, and FYR Macedonia.** War and civil unrest, with the attendant destruction/deterioration of physical facilities and institutional capacities, have affected most countries in this group. Energy supplies are unreliable, and the technical losses have been enormous. Restoration of energy services is crucial to further economic development. The commitment of these countries to market reforms is growing, although many are hesitant to privatize enterprises in the energy sector. The low rate at which payments are collected also negatively affects energy companies.

- **The Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia, and Turkey.** Except for Slovak Republic, these countries endorsed market reforms in the energy sector many years ago and have made considerable progress. There is significant scope for further reform, and accession to the European Union should provide a push. Because investors see positive features in these countries low political risks, better macroeconomic performance, higher energy prices, and stronger financial discipline private investment in new energy facilities is more attractive than in the previous two groups.

- **Azerbaijan, Kazakhstan, Kyrgyz Republic, Turkmenistan, and Uzbekistan.** Very weak administrative capabilities, volatile political conditions, and the strong traditional role of clans hamper modernization of the energy sector. Economic growth in these countries will depend on effective utilization of their substantial energy resources: petroleum in Azerbaijan, Kazakhstan, Turkmenistan, and Uzbekistan, coal in Kazakhstan, and hydropower in the Kyrgyz Republic. The countries need to expand exports and increase foreign direct investment. But a number of geographic, legal, and political obstacles make access to export markets difficult. In particular, the energy transportation system (oil and gas pipelines and electricity transmission lines) was built to serve the internal needs of the former Soviet Union, and its configuration does not reflect present political boundaries. In addition, significant mitigation of risk is needed to promote investment in the export markets.

**Trends, Threats, and Opportunities**

In the next three to five years it is expected that:
- Economic growth will accelerate in the region and reverse the decline in energy demand.
- Countries in the first group (including the two largest, Russia and Ukraine) will remain relatively volatile politically and economically and will experience both reversals and sudden moves forward in their reform efforts. Improving the collection of payments and reducing the amount of bartering will be slow and painful processes. Foreign direct investment will remain at relatively modest levels, concentrated in activities with strong export potential.
- The second group of countries will move forward with reconstruction. Following a slow start, reform of the energy sector will accelerate. The collection of payments will improve gradually.
- Among the countries in the third group, the process of accession of the Czech Republic, Estonia, Hungary, Poland, and Slovenia to the European Union has started in the first half of 1998 and will be close to completion by the end of 2001. In the case of Bulgaria, Latvia, Lithuania, Romania, Slovak Republic and Turkey the process is likely to be slower. Foreign direct investment will grow in the first five countries, with a focus on satisfying the domestic demand for energy.
- In the fourth country group, solutions to the complex geopolitical, legal, and political problems that are hindering an increase in exports of oil and gas from Azerbaijan, Kazakhstan, Turkmenistan, and Uzbekistan will gradually emerge, and foreign investments and fiscal intake will grow in the long run. Similarly, the importance of electricity exports will gradually increase in the Kyrgyz Republic.

Some of these trends present threats as well as opportunities for the World Bank Group:

- The allocation of internal resources to the work programs for the first group of countries will be particularly challenging, and it is likely that some opportunities will be missed and some investments “stranded.”
- Reconstruction in the war-damaged countries offers an opportunity for increased lending and policy advice by the IBRD and IDA.
- Central European countries will enjoy increased access to flows of private capital and resources from the European Union and will need fewer World Bank Group funds and services. At the same time, countries needing to undertake major changes in energy policy and to make large investments to meet European Union requirements may benefit from the World Bank Group’s expertise in promoting competition and selecting least-cost investments.
- The World Bank Group may facilitate the construction or rehabilitation of cross-country pipelines and electricity interconnections by reducing perceived country risks, increasing the credibility of contracts, and providing financing.
- The global impact of carbon emissions in the Europe and Central Asia region will become a major concern when the demand for energy starts growing. The region should then have opportunities to obtain concessional funds for projects involving energy efficiency and renewable energy resources. The opportunities would include
more funds from the Global Environment Facility and possibly the Prototype Carbon Fund (see Chapter II for information on the carbon fund).

Partner Organizations

Several organizations provide important financial and technical assistance to the energy sector in the Europe and Central Asia region. Their role is expected to change in the next three to five years.

- In its work in member countries, the International Monetary Fund (IMF) pays close attention to energy tax policies and resulting flows of fiscal revenue, the balance of payments implications of trade in energy, and the problem of arrears in domestic and interstate payments. The IMF uses the results of these analyses to design the conditionality of its programs. Recently, the IMF began to address structural reform of the energy sector, particularly in the former Soviet Union.

- The European Union and its financing windows, including PHARE and the European Investment Bank (EIB) will be the dominant players in the Central European countries. Energy projects represent about 20 percent of EIB lending, predominantly in the electricity subsector (EIB’s total portfolio, including nonenergy lending, has exceeded $4 billion European Currency Units in the first five countries to accede to the European Union). In the context of accession, EIB will focus on investments that promote compliance with European Union directives.

- The TACIS program of the European Commission will remain the single largest source of technical assistance to the countries of the former Soviet Union. It will continue to emphasize support for reform initiatives developed with World Bank assistance.

- The European Bank for Reconstruction and Development (EBRD) will reduce its lending to state-owned entities while increasing its market share in the financing of investments sponsored by the private sector. The scope of the policy advice and institutional support it provides will remain limited in most countries.

- The involvement of the Asian Development Bank (ADB) in the energy sector in Central Asia will expand gradually (its membership includes three Central Asian countries, Kazakhstan, the Kyrgyz Republic, and Uzbekistan).

- The influence of multinational companies will grow in those countries with large hydrocarbon resources and aggressive privatization programs.

- Bilateral aid organizations will continue to play an important role in providing technical assistance (directly or through trust funds leveraging limited World Bank Group resources).

- The importance of nongovernmental organizations in the region is expected to increase as civil societies become stronger and the demand for participatory development increases. The Energy Charter Conference (and its Secretariat), which were established by the Energy Charter Treaty, will facilitate energy trade in the region by monitoring compliance with the treaty and will act as a forum for East-West dialogue on energy issues.
CHAPTER II. MAIN ELEMENTS OF THE WORLD BANK GROUP STRATEGY

Four main objectives underlie the World Bank Group’s strategy in the energy sector:

- **Assisting governments to protect the public interest** through improved regulatory regimes, demonopolization, increased safety, less local, regional, and global environmental impact from energy sector activities, and transformation of the energy sector from a net user to a net provider of budgetary resources while maintaining/restoring its liquidity

- **Supporting economic transition** through the financing of rehabilitation and strengthening of energy supply facilities where other sources of financing are not (yet) available, **assisting with the institutional aspects** of restructuring and privatization, and **mitigating the negative social impact** of sector restructuring

- **Facilitating private investments** to improve the quality of energy services, and, through guarantees, B loans, and other financial instruments, increase the efficiency and reduce the cost of energy production and consumption

- **Promoting regional initiatives** to increase energy trade and facilitate the sharing of information and experience among countries in the region.

Reduced environmental pollution, improved regulation, and establishment of the technical and institutional infrastructure that energy markets need to function well have strong public good characteristics. The World Bank Group will assist all countries interested in receiving support to pursue these objectives. In addition, in countries where private interest in the energy sector is low but investment needs are substantial (such as Albania or Ukraine), the World Bank Group will finance rehabilitation projects and needed restructuring. In countries that are well along with their transition (the Czech Republic and Hungary are two), World Bank Group activities will focus on facilitating private investments.

**Policies Supported by the World Bank Group**

A number of reports produced by the World Bank Group and other multilateral and bilateral agencies analyze the experience with energy sector reform in Europe and Central Asia and other regions. Drawing on the lessons in these reports, World Bank Group operations will support a set of mutually reinforcing policies in the energy sector, focused on demonopolization and regulation, prices and fiscal policy, foreign trade, investment policy, social protection, and environmental protection.
Demonopolization and Regulation

- Unbundling vertically integrated monopolies to isolate natural monopolies and increase competition among energy producers and suppliers
- Shifting the role of the state from owner to regulator, with particular emphasis on the privatization of companies in the competitive segments of the energy industry and on the development of regulatory systems for natural monopolies, aimed at promoting entry by foreign investors into the energy sector
- Establishing liberalized and transparent markets for energy (solid and liquid fuels, gas, and electricity), and gradually ensuring that all producers and consumers have access to these markets
- Increasing the autonomy, professionalism, and transparency of regulatory bodies.

Prices and Fiscal Policy

- Setting prices at levels that ensure cost recovery and promote efficiency (including the elimination of cross-subsidies)
- Introducing taxes to compensate for the negative externalities of energy production and consumption
- Strengthening discipline in the collection of payments (cutting off nonpaying customers and reducing/eliminating noncash payment methods)
- Eliminating production subsidies and closing uneconomic energy production facilities (such as coal mines, refineries, and power plants).

Foreign Trade

- Opening the domestic energy markets to external competition
- Eliminating the export taxes on fuels and electricity
- Strengthening the institutional framework for regional trading and the movement of oil, gas, and electricity, including compliance with the provisions of the Energy Charter Treaty
- Facilitating the construction/rehabilitation of transnational oil and gas pipelines and electricity connections.

Investment Policy

- Relying on energy companies and not budgetary resources to mobilize investment funds in the coal, oil, gas, electricity, and district heating subsectors
- Supporting investments in energy efficiency and the utilization of renewable energy resources through appropriate financial incentives
• Providing information and comfort (in the form of guarantees against noncommercial risks) to foreign investors so as to increase the inflow of foreign direct investment and know-how into the energy sector.

Social Protection

• Facilitating the shedding/redeployment of surplus labor and strengthening the social safety net for the unemployed
• Transferring social service functions from enterprises to local governments
• Supporting poor urban/rural households that are unable to cope with the rising cost of energy services through lifeline tariffs or means-tested subsidies.

Environmental Protection

• Supporting the preparation of sectoral environmental assessments, including the establishment of baseline emissions and least-cost approaches to achieving future emission targets
• Introducing emission norms for existing facilities that reflect country-specific and local priorities and that are cost-effective and enforceable
• Analyzing the environmental impact of new investments in a systematic manner to ensure (1) that ambient environmental conditions will not deteriorate significantly, with attention to least-cost offsetting measures in other facilities in the airshed or watershed, and (2) that investment decisions take into account the external costs imposed on the environment (even when emissions are within acceptable limits)
• Facilitating the mainstreaming of environmentally friendly technologies and methods.

Focus of Activities by Country Group

Within that framework, the focus of activities by country group is as follows.

• Belarus, Bulgaria, Moldova, Romania, Russia, and Ukraine. The World Bank Group will continue to play a major role in the energy sector in these countries except Belarus, where political changes in 1996 led to the almost complete suspension of Bank Group activities. Operations with a strong policy content are risky but offer potentially high rewards. It is expected that IBRD lending (for both investments and adjustment operations) will remain the most important form of financial support. The World Bank Group will focus its lending and policy advice on downsizing the coal industry in a socially acceptable manner, establishing oil and gas pipelines and power transmission systems with open access, increasing the autonomy and professionalism of regulatory bodies, strengthening discipline in the collection of payments and phasing out barter, and promoting energy savings (with district heating and efficient energy use by households and budgetary entities a primary focus). In the long run these activities will help Bulgaria and Romania adopt and comply with
the laws and regulations (*acquis communautaire*) of the European Union. The IFC will continue to support new upstream and downstream petroleum projects through joint ventures with international companies and, increasingly, the emerging domestic private oil industry (particularly in Russia).

- **Albania, Armenia, Bosnia, Croatia, Georgia, and FYR Macedonia.** While reconstruction of least-cost energy facilities is the immediate priority in these countries, the World Bank Group will also emphasize institution-building in tandem with physical reconstruction of the sector. In particular, it will tie its financial support to sector reforms, including stronger financial discipline, privatization, and establishment of a suitable regulatory framework.

- **Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia, and Turkey.** Because of the increasing availability of other sources of funding (from PHARE, the European Investment Bank, the European Bank for Reconstruction and Development, and the private sector), the World Bank Group is not likely to have a central role. It will focus on areas where it has a comparative advantage, such as supporting independent power producers (these are particularly well-suited for IFC involvement and IBRD/MIGA guarantees), improvements in district heating/energy efficiency, and utilization of renewable energy resources (these can be eligible for support from the Global Environmental Facility and Prototype Carbon Fund). The World Bank Group will also assist some of these countries to develop and finance programs to improve compliance with the *acquis communautaire*. Financial support (loans and guarantees) and institution-building efforts will be closely coordinated with the European Commission, European Investment Bank, European Bank for Reconstruction and Development, and government agencies entrusted with coordination of European Union-related activities in each country. World Bank Group support for countries acceding to the European Union may include investments in pollution abatement, improvement of cross-country gas and electricity transmission links, strengthening of regulatory systems, and development of competitive markets. These countries have learned valuable lessons in energy sector restructuring, privatization, and improved financial discipline, and the World Bank Group will facilitate the sharing of this experience with other countries in the Europe and Central Asia region.

- **Azerbaijan, Kazakhstan, Kyrgyz Republic, Turkmenistan, and Uzbekistan.** The World Bank Group has so far played a limited role in the energy sector in these countries. However, the extent to which they manage to exploit their large fuel and energy resources will be a key determinant of their future growth. The World Bank Group would provide badly needed advice on regulatory matters (upstream and downstream), facilitate the financing of new pipelines and improved connections for the export of fuel and electricity, and rehabilitate energy networks serving domestic consumers (in particular, district heating). These activities will require stronger coordination within the World Bank Group to ensure a consistent approach to stakeholders on such issues as the environmental implications of proposed transport projects, and outside the World Bank Group, particularly with multinational oil, gas, and electricity companies. The lessons from the successes and failures of the bold
privatization/concession programs some countries have implemented (in particular, Kazakhstan) will help other governments who are about to privatize their energy industries.

The Country Assistance Strategies will spell out the main thrust of World Bank Group activities in individual countries. Past and recently adopted Country Assistance Strategies are broadly consistent with the above objectives and activities, although for countries in the fourth group they somewhat understate the importance of support for the energy sector. In view of the strong links between the performance of the energy sector and macroeconomic conditions in the former Soviet Union, the World Bank Group will integrate the energy sector assistance strategies in the first and fourth country groups more closely with macroeconomic dialogue and structural adjustment lending. The Country Unit and energy staff in the IBRD and IFC will make additional efforts to review/revise the Country Assistance Strategies for these countries to ensure that energy sector priorities are better reflected.

World Bank Group Work Program

The World Bank Group offers a wide range of products and services to match the needs of individual countries, including loans, grants, guarantees, participation with equity, and nonfinancial services such as policy advice, mobilization and coordination of donor support, training, and information exchange. One strength of the World Bank Group is the synergies among these products and services: its policy advice is credible because it reflects global experience with development and is supported by resource transfers, and its loans and other financial products are attractive because the associated services that support project implementation and the perceived benefits of receiving a World Bank "seal of approval" mean a higher chance of success. Underpinning these synergies are the World Bank Group’s special status as a global development finance institution and the technical skills of its staff.

World Bank Group activities will be selective, with the focus on areas where it has a comparative advantage and, in countries that are well along in their reform efforts, where it will not be replacing the private sector. As an example of this selectivity at a subsectoral level, the World Bank Group will not finance, guarantee, or participate in nuclear projects because it lacks expertise in this area and because support is available from other international organizations (Euratom and the European Bank for Reconstruction and Development). In another example, IBRD is phasing out its lending for upstream oil/gas activities in view of the increased private sector interest in this subsector in the Europe and Central Asia region. Selectivity at the country level will involve ensuring that interventions are based on careful diagnosis of a country’s situation and the suitability of specific World Bank Group products and services to the problems identified, with due regard to the lessons learned from previous operations.
IBRD/IDA are the World Bank Group's key sources of policy advice and lending to governments. Their strength lies in their comprehensive understanding of the countries in the region, close relationship with government policymakers at the macro and sectoral levels, and position as lenders of last resort. Recently, IBRD added partial credit and partial risk guarantees to the range of financial products it offers (the IDA may do so in the near future). IBRD/IDA require sovereign guarantees from its clients, making them the natural source of financial assistance to public sector entities. The number of state-owned energy companies has been decreasing in the region, however, and this trend is expected to continue, particularly in the competitive segments of the energy industry such as the production and supply of oil, gas, coal, and electricity. The IBRD/IDA will condition their lending to state-owned companies in these segments on the adoption of privatization programs and regulatory frameworks that help new entrants. Companies that are being privatized or are already privately owned may also benefit from IBRD loans, assuming these do not displace commercial sources of financing and do not distort competition. IBRD guarantees are explicitly tied to private involvement and are aimed at increasing the duration of credits and reducing the noncommercial risks of lending.

Lending operations. In FY93-97, IBRD/IDA lending to the energy sector accounted for about 20 percent of their total lending in the European and Central Asia region (figure 1). In terms of disbursements, the energy sector's share reached 27 percent in FY97, the first fiscal year in which disbursements exceeded new loan approvals (figure 2).
Currently, IBRD/IDA are assisting 19 countries with implementation of 45 energy projects for a total of US$4.9 billion. The projects include 18 in the power subsector that focus on the rehabilitation and construction of power plants and transmission or distribution lines and on modernization of dispatching and communication facilities; 12 projects in the oil and gas subsector that involve the rehabilitation of oil and gas fields, construction of pipelines, and clean-up of oil spills; 4 projects in the coal mining subsector aimed at mitigating the social and environmental consequences of the closure of uneconomic mines; 7 projects in the district heating and energy efficiency subsector that center on rehabilitation of heat generation, transmission, and distribution facilities, metering of heat consumption, and improved insulation of buildings; and 4 projects that emphasize the reduction of greenhouse gas emissions through utilization of renewable resources and geothermal energy. The emphasis on rehabilitation and modernization in these projects sets the Europe and Central Asia region apart from others, where the challenge is to add new capacity to keep pace with a growing energy demand.
Figure 2. IBRD and IDA Disbursements to Borrowers in Europe and Central Asia Region 1994-97

US$ Million

Source: World Bank

Progress with implementation, risk ratings, and development objectives for the 45 projects based on recent supervision reports prepared by IBRD staff are summarized in figures 3–5.¹ For two of the portfolio quality indicators -- implementation performance and development objectives -- the share of problem projects is relatively low (16 percent). But one-third of the projects, most of which are in the former Soviet Union, face substantial or high risks. Since the share of projects in the former Soviet Union in the portfolio is expected to grow (see below), the riskiness of the lending portfolio will most likely increase.

¹ The implementation progress ratings indicate the extent to which the projects follow the original implementation plan, including aspects such as timely provision of counterpart funds, compliance with financial covenants, procurement procedures, and social and environmental protection measures. The risk ratings indicate the perceived likelihood of the projects going off track before completion as a result of changes in local or world market conditions, macroeconomic and sectoral policies, inadequate administrative capacity, lack of counterpart funding, and the like. The development objectives ratings indicate the extent to which the projects are expected to meet their main objectives when completed (these could be technical, financial, institutional, social, or environmental).
Implementation of these projects has yielded several lessons:

- Operations that support major reform initiatives are inherently risky, particularly in countries where the government's composition changes frequently. The consensus for reform frequently disappears when key decisionmakers are replaced. Front-loading critical reform steps and focusing on a limited number of objectives increase the chances of success to the extent that they create a fait accompli that successor governments may find it difficult to reverse (or convenient to leave in place).

- Adjustment and investment operations, when implemented in parallel, are mutually reinforcing. It is important to have a mechanism for the speedy transfer of lessons between the micro and sectoral levels.

- On several occasions, governments and IBRD have demonstrated their ability to prepare and implement projects very quickly. These "fast track" interventions have a high success rate. Most of these projects are begun in response to natural and human-caused emergencies. Average preparation and implementation times for projects remain long.

- Complex operations with multiple objectives, beneficiaries, and financiers are particularly costly and time-consuming to prepare and implement. Joint project management units that serve several beneficiaries frequently worsen the problems. The solution is to reduce the complexity in the project design phase and to develop and maintain the closest possible relationship with beneficiaries.

- Cofinancing of institution-building programs by multi- and bilateral donors can leverage IBRD funds very effectively but requires sustained and intensive coordination by IBRD staff. Cofinancing of project implementation assistance (such as the preparation of bidding documents or supervision of contractors) makes less
effective use of donor resources and substantially increases the risk of implementation delays.

- The involvement of central ministries (economy and finance) is crucial for the success of both sectoral adjustment and investment operations. Without their support, projects that hurt certain sectoral interests can be easily sidetracked (for example, utilization of renewable resources reduces the market for traditional fuels, which powerful lobbies support).

- Building up local capacity for procurement and disbursement is a lengthy process that should be started as early as possible in countries/agencies that have not dealt with IBRD-financed projects before. Where the borrowers and beneficiaries are inexperienced, procurement assistance tends to require disproportionate supervision.

- Having qualified staff in the resident missions to assist the project implementation units with procurement and other tasks is effective in bridging the gap between supervision missions. More generally, the experience with extended reliance on resident mission staff during various steps in the project cycle has been positive.

These lessons have been applied to the 35 energy projects currently under preparation in 14 countries, with a total estimated lending of US$4.0 billion. Of these projects, 15 are in the power subsector, 5 in the oil and gas subsector, 2 in coal mining, and 8 in district heating and energy efficiency. Five will focus on the utilization of renewable energy resources (and geothermal energy) to reduce greenhouse gas emissions (these projects will be cofinanced the Global Environment Facility). The composition of the lending program, in comparison with the projects already being implemented, shows a shift toward district heating/energy efficiency and the renewable resource subsector. The share of the former Soviet Union in the portfolio is expected to increase markedly. **Program team leaders will be responsible for ensuring that the projects under preparation are consistent with the policies described above** (the policies are discussed in more detail for each subsector in chapter III).

IBRD/IDA are currently identifying a number of new energy projects. It is expected that the shift toward district heating, energy efficiency, and renewable resources, and toward countries of the former Soviet Union, will be even more pronounced. These areas are particularly well-suited for financing through the new IBRD lending instruments. Adaptable Program Loans, Learning and Innovation Loans, the Global Environment Facility, and a potential new financing source, the Prototype Carbon Fund. This fund, a product of the Global Carbon Initiative of the World Bank, aims to facilitate the establishment of market-based mechanisms that reduce greenhouse gas emissions in line with the provisions of the United Nations Framework Convention on Climate Change and the Kyoto Protocol. The Prototype Carbon Fund is expected to supply high quality greenhouse gas offsets to investors at a competitive price. Identifying projects the fund will support and strengthening client capacity to participate in market-based schemes to reduce greenhouse gas emissions are tasks the Government of Switzerland and other bilateral donors will cofinance in the context of the National Strategy Studies Program. Studies have been already completed in the Czech Republic, Russia, and Slovak Republic and are underway in Uzbekistan, Kazakhstan, and Ukraine. Additional studies are planned for Bulgaria, Romania, and Poland. The shift toward
renewable resources and energy efficiency will require strengthening the skills of IBRD staff in these areas.

**Guarantees.** As mentioned, IBRD offers partial credit and partial risk guarantees to lenders providing loans to private entities. Currently, IBRD has no guarantee operations in the energy sector in the Europe and Central Asia region because of a weak commitment to reform by the governments in several countries and their reluctance to provide the necessary counter-guarantees, the limited interest of private investors in the region, and the relative unfamiliarity of clients and World Bank Group staff with guarantee operations. As privatization moves forward, commercial lending to privately owned companies is expected to grow, and increased use of guarantees against noncommercial risks (such as changes in regulation) will be needed. *Identification and preparation of new guarantee operations will receive increased emphasis in the work program of the Europe and Central Asia Energy Sector Unit.* World Bank and client representatives will receive training on access to and use of guarantees. Preparatory work, being carried out with resources and expertise from various parts of the World Bank, has already started on a partial credit guarantee in Turkey; a number of other guarantee operations are being identified. Guarantees should reinforce rather than replace sector reforms, and the development of guarantee operations will focus on countries that have made genuine progress in establishing an enabling environment for private investment but that commercial lenders still perceive to be too risky. Guarantees may partly substitute for the decreasing volume of lending to countries in the region other than those of the former Soviet Union.

Large projects usually require financing and guarantees from several sources to overcome the capacity constraints of involved institutions. For a specific project, the following financial instruments might be available to complement IBRD and IFC loans and guarantees:

- Financing provided or guaranteed by bilateral export credit agencies is most commonly used for imports of large amounts of capital goods. The exporting country provides the financing to support the exports. Guarantees usually cover up to 85 percent of the cost of the capital goods exported from the home country of the agency. Unfortunately, the export credit agencies in several countries in Central and Eastern Europe are closed, especially for medium-term business, so that energy sector investments have less access to this option. Coverage is likely to be available in the more advanced Central European countries. In countries further to the east, if a specific transaction involves a significant amount of exports from one country, it might be worth exploring the availability of bilateral coverage from that country case-by-case.

- Off-the-shelf political risk insurance for foreign direct investment is available from MIGA. In addition, a limited number of countries have a bilateral agency offering similar products. The largest is the Overseas Private Investment Corporation, a U.S. agency. This type of insurance covers equity investments and loans that are made in conjunction with equity investment. Coverage is limited to "classic" political risks: inconvertibility and inability to transfer, expropriation, war and civil disturbance,
and, for some agencies, breach of contract. The capacity of these bilateral agencies may be insufficient to cover very large investments in the energy sector.

- **B-loans** are commercial loans with a multilateral institution as the lender of record (loans provided by the IFC or the European Bank for Reconstruction and Development are called A-loans). When a multilateral institution is involved, commercial financiers perceive that a country will not default on the loans. Since the host government does not have to provide any guarantees, this instrument is preferable to those that require government guarantees, such as IBRD loans and guarantees.

*Nonfinancial services.* Most of the nonfinancial services provided by IBRD/IDA involve policy advice. The main instrument is free-standing sector reports or notes that World Bank Group staff prepares and disseminates to assist clients in developing strategies for restructuring and privatizing their energy industries, improving regulatory arrangements, achieving greater cost recovery, better allocating public funds, and designing appropriate energy and environmental strategies and policies. Frequently the projects include training (both formal and on-the-job) to increase the technical skills of clients (central and local governments and energy companies) in areas such as financial management, procurement, environmental protection, and mitigation of social impact. When a project does not include the required technical assistance, the IDF may provide support to clients, or IBRD/IDA may facilitate the funding of technical assistance by other multi- and bilateral donors to leverage the limited resources of the World Bank Group for this purpose. An example is the Energy Sector Management Assistance Program, jointly funded by a group of donors and IBRD (IBRD contributes at least 20 percent of the program’s budget). Adjusting the mix of nonfinancial services to the needs of individual clients is a major challenge.

IBRD/IDA are planning a new activity that would facilitate the exchange of information among energy sector managers in European and Central Asian countries. Drawing on the experience of IBRD/IDA and that from other regions of the world, staff will identify and disseminate best practices through a set of recent regional initiatives in three broad areas: (1) sector reform, including regulation, financial discipline, energy markets, and privatization; (2) energy trade, including incentives for and obstacles to the construction/utilization of cross-country pipelines and electricity lines; and (3) environmental protection, including the reduction of gas flaring, prevention of oil spills, elimination of lead from gasoline, cost-effective control of emissions from power plants, and analysis of the benefits of investments in energy efficiency and renewable resources. Initiatives include the preparation of comparative reviews of the experience of Europe and Central Asia countries and the organization of seminars for government officials and enterprise managers.

*Operating budget.* Figures 6 and 7 show the allocation of the FY98 operating budget of the Europe and Central Asia Energy Sector Unit across countries and subsectors (based on Work Program Agreements). Notably,
• About one-third of the budget goes to only two countries, Russia and Ukraine (the total operating budget is $9 million).

• Very small amounts (in absolute and relative terms) go to three of the countries with the richest natural endowments of energy resources -- Kazakhstan, Turkmenistan, and Uzbekistan.

• Electricity, coal/oil/gas, and district heating/energy efficiency/renewable resources each get about a third of the budget. The Global Environmental Facility and Global Carbon Initiative finance most of the activities involving renewable resources.

• About 10 percent of the budget is spent on nonfinancial services, including single country and regional sector work (the figures do not show this information).

Russia and Ukraine will likely continue to be the dominant recipients of support from the operating budget in the foreseeable future. However, their share is expected to decrease somewhat as more resources go to Central Asian countries. The share of the budget spent on district heating, energy efficiency, and renewable resources will increase, whereas that of coal, oil, and gas will decrease.

**Figure 6. Country Budget Allocation to the Energy Unit, Europe and Central Asia**

<table>
<thead>
<tr>
<th>Country</th>
<th>$'000 Budget</th>
<th>Percent of Country Budget</th>
</tr>
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<tbody>
<tr>
<td>Russia</td>
<td>1,800</td>
<td>25</td>
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<tr>
<td>Ukraine</td>
<td>1,600</td>
<td>20</td>
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<tr>
<td>Poland</td>
<td>1,400</td>
<td>15</td>
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<tr>
<td>Romania</td>
<td>1,200</td>
<td>10</td>
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<tr>
<td>Turkey</td>
<td>800</td>
<td>6</td>
</tr>
<tr>
<td>Bosnia</td>
<td>600</td>
<td>4</td>
</tr>
<tr>
<td>Armenia</td>
<td>400</td>
<td>3</td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>200</td>
<td>2</td>
</tr>
<tr>
<td>Georgia</td>
<td>200</td>
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<tr>
<td>Moldova</td>
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<td>2</td>
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<tr>
<td>Lithuania</td>
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<td>Kyrgyz R.</td>
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<tr>
<td>Hungary</td>
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<td>2</td>
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<tr>
<td>Latvia</td>
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<tr>
<td>Albania</td>
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<tr>
<td>Kazakhstan</td>
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<td>Moldova</td>
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<td>Estonia</td>
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<td>Croatia</td>
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<tr>
<td>Tajikistan</td>
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<td>2</td>
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<tr>
<td>Uzbekistan</td>
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<tr>
<td>Aral Sea</td>
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<tr>
<td>Cyprus</td>
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<tr>
<td>Portugal</td>
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<tr>
<td>Andorra</td>
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<tr>
<td>Belgium</td>
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<td>2</td>
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<tr>
<td>Greece</td>
<td>200</td>
<td>2</td>
</tr>
</tbody>
</table>

Source: World Bank
International Finance Corporation

The IFC’s strength is its ability to appraise and support private investments that have no government guarantees it can accept the full commercial risk of the investments it makes. It can also help private sector development through two mechanisms. One is selective advice (for example, assisting governments with privatization transactions). The other is the financing of private investments through two mechanisms: flexible financial packages that may include loans, equity, and quasi-equity investment; and the mobilization of financing from commercial banks, capital markets, and other institutions.

The quality of the enabling environment for private participation in the energy sector is crucial for sponsors and their financiers, including the IFC. There is important synergy between IBRD’s work with host country governments on sector reform and IFC projects that translate the new institutional arrangements into tangible investments. IFC’s participation:

- Reassures other financiers so that they are more willing to invest and expand their participation in a project and, more generally, in the sector;
- Mitigates certain risks and thereby improves the terms of commercial financing;
- Allows it to act as an honest broker that can accelerate agreement between project participants on contentious issues;
- Supports innovative approaches, be it in the area of institutional reform, entry into new subsectors for private sponsors (electricity transmission and distribution or a...
first-time independent power producer in a country), or application of a new
technology;

- Is a catalyst for development of the local capital market by mobilizing
  complementary local investment in a project.

Currently, the IFC has 14 energy projects in various stages of implementation in
the Europe and Central Asia region. Nine are in the oil and gas subsector and four in
electricity, and one supports demand-side improvements in energy efficiency. Currently it
is discussing a number of new power, oil, gas, and energy efficiency projects with project
sponsors. Its medium-term plans include support for the utilization of renewable energy
resources through a recently established global investment fund (Renewable Energy and
Energy Efficiency Fund). Finally, the IFC is advising some governments in the region on
the privatization of energy enterprises.

**Multilateral Investment Guarantee Agency**

As noted, MIGA provides long-term investment guarantees (insurance) without
government guarantees to private investors against the political risks of transfer
restriction, expropriation, war and civil disturbance, and breach of contract. Coverage is
available for new investments and the expansion and privatization of existing projects.
Eligible forms of investment include equity, shareholder loans, loan guarantees,
commercial bank loans, and technical assistance and management agreements. MIGA
also provides technical assistance to host governments to enhance their ability to attract
foreign investment, with a focus on three areas. First is the dissemination of information
on investment opportunities and business operating conditions in economies in transition
and developing member countries. Means of information dissemination include the
Investment Promotion Agency Network (IPAnet), an online global information
communications network, and the Privatization-Link, an online information service on
privatization programs in developing countries and economies in transition. The second is
direct support of investment promotion activities. The third is capacity-building for
institutions promoting and facilitating foreign investment. Most Europe and Central Asia
countries are members of MIGA (Latvia, Tajikistan, and Yugoslavia are in the process of
becoming members).

MIGA’s current exposure in the energy sector in the region is US$34.5 million in
a single guarantee operation in the Czech Republic for a power project in Kladno (MIGA
insured the equity of a foreign investor in the project). MIGA has received a large number
of preliminary guarantee applications for energy projects in the region, including projects
in Armenia, Croatia, Hungary, Kazakhstan, Poland, Romania, Turkey, and Ukraine, with
a total investment potential of over US$5 billion. Although many of these applications
will not result in guarantees, the volume of MIGA’s business in the energy sector in the
region is likely to increase substantially in the coming years. MIGA aims to diversify its
portfolio to include all member countries. It will insure projects that are technically and
financially sound, have high development impact, and comply with World Bank
environmental guidelines.

- 20-
Partnerships

Building on the comparative advantages of organizations inside and outside the World Bank Group is an essential element of a strategy that aims to maximize development impact. Internally, the World Bank Group needs to strengthen cooperation among the staff working directly with clients. The products offered by members of the World Bank Group can be mutually supportive. For example, the IFC is financing part of the costs of the Kladno power project, and a MIGA guarantee covers another part. A fund provided by the Global Environmental Facility supports the IFC's energy efficiency credit line in Hungary (the fund protects the commercial banks administering the credit against loan defaults). However, there is no energy project cofinanced by IFC in the IBRD portfolio currently. The lack of a systematic exchange of operational information hampers effective cooperation among members of the World Bank Group. Semi-annual joint reviews of ongoing and planned IBRD, IFC, and MIGA operations will strengthen communications at the regional level. The ultimate objective is to enable all staff to be familiar with and offer clients the full range of services and products of the World Bank Group.

Equally crucial is improved cooperation with external partners. A recent example of a new type of partnership is the collaboration among the European Commission, the European Bank for Reconstruction and Development, the European Investment Bank, and the World Bank Group, established in connection with the application of 10 Central and Eastern Europe countries to membership in the European Union. Through a Memorandum of Understanding the four parties have agreed to coordinate closely their support to these countries, leveraging World Bank resources and ensuring consistency of policy advice.

Areas where greater collaboration is particularly necessary include the following:

- To maximize the synergy between the IMF and the World Bank Group and increase awareness of the energy-macro linkages in adjustment, more intensive collaboration is needed between the IMF and the Bank's Country and Energy Units during the preparation and implementation of Stand-by Arrangements, Enhanced Structural Adjustment Facilities, Extended Fund Facilities, Structural Adjustment Loans, and Sector Adjustment Loans. Because the energy sector has particular macroeconomic importance in terms of budget, balance of payments, and structural adjustment, IMF programs frequently contain reform measures in the energy sector.

- The Memorandum of Understanding, which furthers a close cooperative relationship between the IBRD and the European Commission, still needs to be translated into concrete actions at the level of individual countries and project/technical assistance activities. Current plans include joint training to assist the development of competitive electricity and gas markets, cooperation to develop and strengthen trans-European networks, and a review of country-specific assistance programs with the national PHARE coordinators, one purpose of which is to identify possible joint projects. In addition, coordination between IBRD and the TACIS program of the European Commission is to be improved on a country-by-country basis.
When the European Investment Bank started lending to nonmember countries in the Europe and Central Asia region in 1990, it cofinanced a number of energy projects with IBRD, building on the World Bank's relationships and knowledge. Over time, because of IBRD's decreasing presence in those countries that had made the most progress with transition, the opportunities for cofinancing diminished. Now the European Investment Bank is gradually moving into the less advanced transition countries, and new opportunities for close cooperation with IBRD and other members of the World Bank Group will likely emerge.

The relationship of IBRD and the European Bank for Reconstruction and Development has been more competitive than cooperative, despite joint preparation and financing of projects in a couple of countries. The IFC has a better track record in this respect, as demonstrated by two recent projects (the IFC and EBRD jointly appraised, negotiated, and financed an oil project in Azerbaijan, and Honeywell, IFC and EBRD are currently establishing a facility for investing in energy service companies). The European Bank for Reconstruction and Development's comparative advantage is the wide range of financial instruments it offers. The World Bank Group's advantage is its global reach and its emphasis on economic and sector work. The planned systematic sharing and, in some cases, joint development of energy sector strategies is already moving the relationship of the two institutions toward cooperation (a recent example is the jointly developed Ukraine Energy Efficiency Strategy). The planned phase-out of public sector lending by the European Bank for Reconstruction and Development in the energy sector will reinforce this shift.

The Asian Development Bank has limited its activities in the energy sector in Central Asia to the Kyrgyz Republic. Its work there includes cofinancing a power and district heating rehabilitation project with the IDA. The World Bank Group shares the Asian Development Bank's interest in cross-country initiatives to facilitate energy trade in Central Asia, and there are good opportunities for further cooperation.

Parallel financing of projects and technical assistance provided by bilateral donors (including the United States, Japan, United Kingdom, and Germany) will remain important to the overall support provided to Europe and Central Asia countries undertaking energy sector reform. The World Bank Group will continue to facilitate this collaboration by assisting governments in coordinating technical assistance in countries and sectors where several donors have operations.

The role of multinational companies will sharply increase in those countries that successfully privatize their energy enterprises, a change that will require more frequent contacts between these companies and the World Bank Group. A number of multinationals have expressed a willingness to share their expertise on operating competitive gas and electricity markets with government agencies and transmission companies/dispatch centers in the region, if the World Bank Group is ready to help coordinate the effort.

The World Bank Group will increasingly emphasize cooperation with nongovernmental organizations active in the energy sector in the Europe and Central
Asia region. These organizations can be very effective partners in facilitating stakeholder participation and raising general awareness of important environmental and social issues, as the example of Russia and Ukraine shows (see the box).

- The Energy Charter Treaty is important in promoting international cooperation and trade in the energy sector. Most Europe and Central Asia countries have signed the treaty and intend to ratify it. The World Bank Group will promote the treaty's ratification and implementation and consult regularly with the Energy Charter Secretariat.
Stakeholder Participation

Stakeholder participation is integral to the design and implementation of World Bank energy operations with major social impacts in the Europe and Central Asia region. This participation usually is multipronged and includes working with local governments and nongovernmental bodies, and reaching out directly to affected communities and individuals through ongoing social assessments. These assessments are a critical check on the effectiveness of programs designed to improve people’s lives. At key points in the project cycle the nongovernmental organizations usually review and comment on aspects of stakeholder participation.

The human dimension of energy sector reform is particularly important in the mining subsector. Historically, the settlements that grew up around coal and other extractive industries existed primarily to meet the labor demands of enterprises. Recently, the demand for labor has been shrinking as these industries decline or, in more fortunate cases, are rationalized and increase their labor productivity. A central goal of any reform program is to cushion the transition for laid-off miners and their families and to help affected communities diversify their economic base.

In Russia, where the World Bank has supported the government’s reform program in the coal sector through policy advice since the early 1990s and more extensively through a series of adjustment and technical assistance loans since 1996, the Bank recognized the need for stakeholder participation from the start. Bank social scientists were members of the project team and played a central role in designing the Bank’s support. In response to the Soviet legacy of essentially no grassroots organizations, Bank staff helped galvanize the creation of Local Oversight Committees in dozens of coal mining towns. These committees represent a cross-section of stakeholders, including local administration, trade unions, employment services, and coal companies. Bank recommendations also led to the creation of the Association of Mining Cities, which facilitates the exchange of experience among local governments in coal cities. Two independent trade unions have received support through technical assistance funds that have allowed them to provide counseling and legal services to their members, to conduct regular seminars, and to represent the interests of their constituencies to employers and the government more effectively. As the reform program evolves, support for these and other participatory bodies continues and is fine-tuned. Since 1995, the World Bank has conducted regular social assessments of the impact of the reform program through surveys of miners and nonminers in affected communities. Through focus groups researchers have explored issues of relevance and concern to the mining communities in greater depth that might have been possible through other channels.

In Ukraine, as part of assistance to the government’s coal sector restructuring program, the World Bank engaged Ukrainian research institutes, social scientists, and nonprofit groups in improving their understanding of the social issues associated with mine closures and identifying effective mitigation measures. Community organizations, research entities, and nonprofit groups that have provided input throughout program implementation include the Council of Trade Unions (through regular consultations with the Bank team), the Ethnographic Research Group, Poisk (through an ethnographic study of coal miners), the Eastern Ukrainian Foundation for Social Research (through the Donetsk household survey and a study of the social consequences of coal sector restructuring), and the Kiev International Institute of Sociology (through a social assessment of the coal industry restructuring and an analysis of measures to mitigate adverse social impacts). The input of these Ukrainian organizations was invaluable and enabled the government and the World Bank to adjust the restructuring program.

In addition to analytical input, nongovernmental organizations have helped the government and the World Bank with actual implementation of social mitigation measures, particularly in the areas of employment generation and infrastructure rehabilitation. The Eurasia Foundation has provided funding to the nonprofit Donetsk Center for Research and Development of Small Businesses in Donbass to facilitate training of laid-off mine workers and conduct an incubator/workspace program. Two nonprofits, Geshtalt and Sepak Donbass, the Peace Corps, the United States Agency for International Development, and business centers supported by the United Kingdom Know How Fund are implementing business training for micro-credit programs in Dnepropetrovsk, Sumy, Vinnytsia, Zhitomir, Donetsk, Lugansk, Mariupol, Khmelnytsky, and Cherkassy. The Ukrainian League of Women’s Businesses provides counseling on women’s rights issues in mining areas. The community of Yenakievo, a city next to a closed mine, initiated the rehabilitation and upgrading of a school divested from the mining company and received support from the Soros Foundation. The Bank is placing similar emphasis on stakeholder participation in the design of planned assistance programs to facilitate the restructuring of the coal industry in Romania and Poland.
CHAPTER III. SUBSECTOR ISSUES, POLICIES, AND WORK PROGRAMS

This chapter looks at issues, policies, and institutional work programs relating to reform in the coal, oil and gas, power, district heating and energy efficiency, and renewable resource subsectors.

Coal

The coal industry is a major source of fuel as well as employment in many countries in Central and Eastern Europe and Central Asia. Unfortunately, most state owned mining companies failed to modernize and focus their operation on the best coal deposits in light of increasing competition from gas and oil producers and low cost mines outside the region.

Key Issues

The key issues in the coal subsector are as follows:

- A large part of the industry is uneconomic and places a substantial burden on the budget or, when prices are kept above import costs, on coal consumers.
- Government interference in the import, export, and domestic marketing of coal, which entails excessive reliance on regulatory authority and state ownership, distorts the markets for coal.
- Occupational safety is dismally low, and the environmental impact of coal mining and coal use is highly negative.
- The social services (such as kindergartens, hospitals, housing, district heating, and cultural and sport facilities) for which the mines are responsible need to be transferred/privatized before the mines are closed.
- Miners are unionized and politically influential, and overstaffing is widespread, even at the mines that break even financially.
- The build-up of wage arrears in countries of the former Soviet Union negatively affects miners and their families.
- The scope for private investments is limited to a few profitable mines, even after government withdraws from daily management of the coal industry.
- The geographic concentration of the negative social impact of mine closures, lack of alternative employment opportunities, and an inadequate social safety net complicate downsizing the industry.


World Bank Group-Supported Policies

World Bank Group policies recognize that:

- The closure of uneconomic mines requires budgetary support and they cannot all be closed overnight.
- The best efforts will not to mitigate all the negative social consequences of the mine closures, and governments cannot mass-produce alternative jobs (offering each redundant miner a new job would be inefficient and unaffordable).
- A social mitigation package that includes all statutory benefits, augmented by special efforts to create jobs in the areas heavily affected by restructuring, will be needed.
- The miners must be involved in designing the mitigation program, and their social situation must be assessed regularly during implementation.
- Mines with good long-term potential will temporarily need loans for productivity improvement projects, with emphasis on occupational health and safety, so that they have a chance to succeed in a fully liberalized market environment and attract private investors.

Work Program


- Initially IBRD was reluctant to get involved in restructuring the coal industry because the political risk seemed high. Eventually the fiscal dimension of the restructuring the need to reduce the subsidies to loss-making mines and pressure from the governments in Russia and the Ukraine pulled the IBRD into the subsector in those two countries. Extensive sector work and dissemination preceded the lending operations.
- Currently IBRD’s lending portfolio includes four ongoing operations and one under preparation, all in Russia and Ukraine (it may also get involved in restructuring in Poland and Romania). Its lending operations have a strong policy focus and aim to increase the flow of resources to the restructuring/mine closure effort. The projects under preparation will support the potentially viable part of the coal industry, with a focus on improving occupational health and safety.
- Strong commitment by central and local governments and support by coal customers must be present before IBRD will go ahead with lending operations (a lack of commitment has prevented lending to the coal industry in Poland, despite major sector work). Sustaining that commitment over time is a particularly difficult challenge (in Ukraine, for example, a weakening of government commitment to closing uneconomic mines and rationalizing the production subsidies has prevented release of the second tranche of the Coal Sector Adjustment Loan).
- Addressing the social and regional dimensions of coal restructuring requires innovative approaches, cooperation with experts on social and regional development policy, and increased reliance on community groups and nongovernmental organizations to foster stakeholder participation.
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- State control over coal mining activities and difficult social and environmental problems have prevented substantial private involvement in this subsector. Changes in regulatory practices and ownership structures will improve commercial prospects and increase private sector interest. At this point the IFC will help with the financing of private investment projects.

Oil and Gas

Many countries in the region are particularly well-endowed with hydrocarbon resources, however, due to a variety of reasons, they failed to realize the full potential of these resources to generate substantial revenue from exports.

Key Issues

Among the principal issues to be addressed in the oil and gas subsector are:

- Exploration/production technologies are outmoded, and access to foreign markets is limited.
- Production practices are poor and cause pollution (examples being excessive gas flaring and inadequately capped wells).
- Pipelines leak because of age and inadequate maintenance.
- There is excess refining capacity, its configuration is obsolete, and its environmental performance is poor.
- An inadequate legal and regulatory framework impedes the inflow of foreign capital and know-how and increases environmental and safety hazards.
- Prices generally cover costs, but in the countries of the former Soviet Union collection of payments has become a major problem in the gas subsector.
- Despite large gas reserves and generally well-developed gas transmission networks, gas is underutilized for space heating in most of the region.
- The inclination of politicians to control resources and the desire of monopolists to preserve their privileged status create a powerful coalition against liberalization of the market, particularly for gas.
- Artificial monopolies and a lack of transparency, coupled with the large size of individual transactions, have led to a great deal of corruption in the oil and gas subsector in a number of countries.
- Unresolved legal issues and conflicting political objectives hamper development of the oil and gas resources in the area of the Caspian Sea.
World Bank Group-Supported Policies

The policies the World Bank Group has established for the oil and gas subsector call for the following:

- Each country needs to create an enabling environment for the private sector, to include improved laws governing petroleum exploration and production, liberalized prices, and rules that ensure open, nondiscriminatory access to deposits, pipelines, and markets.
- Transit fees and import tariffs need to be reduced and nontariff barriers removed.
- The efficiency of gas consumption needs to be based on improved discipline in the collection of payments, elimination of price subsidies, installation of metering devices, and rehabilitation of those portions of the transmission and distribution networks that have deteriorated significantly will boost.
- The local, regional, and global environmental impact of oil and gas industry operations should be reduced by developing and enforcing improved environmental standards (including product specifications), coupled with investment in new facilities and rehabilitation of facilities that are causing environmental problems.
- Gas distribution networks will be extended to replace district heating (when economically justified) and the more polluting fuels on the residential market.

Work Program


- The current lending portfolio includes 12 projects under implementation and 5 under preparation. Those under implementation, with total approved lending of US$1.7 billion, focus on four key areas:
  
  1. Rehabilitation projects in Russia, Kazakhstan, Romania, and Poland that upgrade facilities and thereby improve the returns from the subsequent privatization of operations.
  2. Environmental improvements in oil and gas activities in Russia, Azerbaijan, Kazakhstan, and Poland.
  3. Institution-building in Azerbaijan, Kazakhstan, Russia, and Romania (the first two are free-standing institution-building operations)
  4. Development of the regional oil and gas trade by supporting regional studies of the feasibility of pipelines in Georgia and Turkey and by including institution-building in other operations.

- The projects being prepared or identified place increasing emphasis on regional and environmental issues such as the development of oil and gas in the Caspian Sea area, creation of transportation facilities to move this oil and gas to markets, and possible additional clean-up efforts (similar to the Komi Emergency Oil Spill Project), supplemented by efforts to reduce gas flaring and venting.
IBRD will help interested client countries prepare to privatize their oil and gas industry and will continue to support other institution-building efforts.

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In the last five years the IFC approved nine investments totaling US$383.5 million that helped finance oil and gas projects in the Europe and Central Asia region. The total estimated cost of the projects is US$1,240 million. The IFC will respond flexibly to private sector financing needs that the market cannot handle. Its role in helping finance private oil and gas developments in the region will vary by country.

In countries where the transition to market economies is relatively well-advanced and where private investors have relatively good access to commercial sources of financing, the IFC’s role is likely to be limited. In these countries, it will focus on projects that attract financing less easily, such as the development of oil and gas fields by small companies for local use and the construction of cross-border pipelines.

In other countries the IFC’s role is likely to be more comprehensive. It will include continuing support for new upstream and downstream oil developments through joint ventures with international companies and, increasingly, through the emerging domestic private oil industry (in particular, in Russia). The large investments needed for oil and gas pipeline projects in the region (particularly in Central Asia), which will be the key to unlocking much of the region’s oil wealth, are a likely area for joint IFC/IBRD cooperation.

**Power**

A well-functioning power industry providing high quality services at a reasonable cost is an essential condition for economic recovery and growth in the region.

**Key Issues**

Six issues characterize the status of the power industry in the region:

- The poor quality of the electricity supplied to final consumers (voltage instability, service interruptions)
- Excess capacity for power generation and obsolete, overstaffed, heavy polluting, and (in some cases) unsafe plants, posing major technical, financial, and social challenges
- Poor dispatch and communications systems
- Low cost recovery because of low prices or low payment collection ratios
- A rapidly changing industry model, which is shifting from vertically integrated, publicly owned monopolies toward unbundled, privately owned, competitive systems
- The lack of a transparent, predictable regulatory framework, a situation that diminishes the attractiveness of the power industry to private investors.
World Bank Group-Supported Policies

The World Bank Group’s policies in this area specify that:

- Nonpaying customers will be cut off and barters eliminated.
- Competition will be introduced in electricity generation and supply.
- Predictable, transparent, and autonomous regulatory regimes will be established.
- The scope for applying market-based pricing with minimal regulatory intervention will be enhanced.
- The role of government ministries will shift from that of owner/manager to policymaker, at the same time that the government sells assets in the power industry to private, strategic investors.
- Investments will focus on measures that improve the quality of the electricity supply and reduce environmental impacts.
- The closing of excess and/or unsafe generation capacity and shedding of excess labor will be conducted in an environmentally and socially responsible manner (for example, by providing adequate severance pay and facilitating the creation of alternative employment).
- Trade in electricity across countries will be facilitated to create efficient regional markets for electricity.

Work Program


- Power has the largest IBRD/IDA portfolio among the subsectors, with 18 projects under implementation and 14 under preparation. The focus is on maintenance, rehabilitation, reduction of losses and improvements in efficiency, environmental protection, and institution-building. Projects currently being identified are expected to have a similar focus, except that there will be a gradual shift from electricity generation to transmission and distribution.
- Medium-term plans include projects to improve the regional trade in electricity, including by constructing/strengthening transmission lines, improving communications and dispatch, and establishing common operating standards.
- IBRD plans to facilitate the privatization of electricity enterprises and rehabilitation of facilities in selected countries through guarantees against noncommercial risks.
- It is participating in the dialogue on nuclear safety and supports efforts to phase out unsafe plants by financing nonnuclear alternatives and energy efficiency measures. In addition, it promotes prices that cover the cost of nuclear safety upgrades, spent fuel disposal, and decommissioning in accordance with internationally accepted standards.
• IBRD facilitates a sharing of experience on operations in the electricity market, regulation of network monopolies, and privatization.

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• So far the IFC’s board has approved four power projects in the Europe and Central Africa region: two in Russia (a loan to Mosenergo and a captive cogeneration plant for a steel mill), one in the Czech Republic (the Kladno cogeneration plant), and a small one in Turkey. With the exception of the project in Turkey, all are relatively recent operations.

• The projects currently being discussed with developers include generation and distribution projects in Turkey, one generation project each in Armenia, Poland, Russia, and Ukraine, and a distribution project in Kazakhstan.

• The medium-term plans include power generation projects in Armenia, Georgia, Hungary, Romania, and Russia (captive power plants), and distribution projects in the Czech Republic, Poland, and Russia. Achievement of these plans depends on a number of factors, including the evolution of legal/regulatory frameworks, strengthening of financial discipline, and continued privatization.

• The IFC is not yet active in Albania, Belarus, Bosnia, Bulgaria, Kyrgyz Republic, Tajikistan, and Turkmenistan because private investors find the environment in the power subsector unfavorable (no controlling blocks of shares are held privately is one reason).

District Heating and Energy Efficiency

The district heating networks were constructed at a time when energy was cheap. Their technology is incompatible with the current objectives of minimizing losses, measuring consumption, and providing a wide range of service levels geared to what customers are willing or able to pay.

Key Issues

Following are the principal issues relating to district heating and energy efficiency:

• The gap between costs and prices continues to be particularly large in the residential heating market.

• Central governments are no longer able to cover the cost of uniform service, at the same time that the ability of industrial customers to produce their own heat limits the scope for cross-subsidies.

• The operation of combined heat and power plants and the ownership of heat transmission facilities by power companies create strong linkages between the district heating and electricity subsectors in several large cities. It is particularly difficult to price the output of the combined heat and power plants correctly so as to
avoid economically inefficient cross-subsidies between electricity and heat consumers.

- Although regulation of district heating has recently been delegated to local governments, few of them are capable of handling the responsibility.
- Individual metering of heat consumption is unaffordable, and frequently there is no legal basis for collective metering and payment of bills by private apartment owners.
- The command-and-control methods used to motivate energy savings are difficult to apply in a liberalized, privatized business environment.
- Inadequate information is available about energy-saving measures, including state-of-the-art technologies, financial benefits, and experience applying them.
- The number of specialized energy service companies able to offer both expertise and financing is few.

**World Bank Group-Supported Policies**

In this area, the World Bank Group policies specify that:

- Cross-subsidies and direct price subsidies should be phased out to enable suppliers of district heating to compete for industrial customers and reduce governments’ budgetary expenditures.
- Homeowners associations can be fostered and encouraged to take over the district heating bills and to undertake energy-efficiency investments jointly.
- Institutional capacity at the local level needs to be emphasized to improve the regulation of district heating activities and strengthen the management of district heating companies.
- Supporting investments will aim to reduce losses, improve measurement and control of heat flows (first at the level of individual buildings), and reduce demand through better insulation and other energy-saving measures.
- Where economically justified, buildings should be disconnected from the district heating network and individual boilers installed.
- The previous command-and-control approach to energy savings should be replaced with new, market-based energy efficiency initiatives, including the promotion of energy service companies through institutional and financial support.

**Work Program**


- The current lending portfolio includes seven projects under implementation and eight under preparation. Included are the rehabilitation of heat generation, transmission, and distribution facilities, the metering of heat consumption, and improved insulation of buildings.
• IBRD is shifting the beneficiaries of its energy-efficiency projects from industrial enterprises toward residential and public buildings. It is emphasizing cooperation with central and local governments and homeowners’ associations.

• IBRD will study the experience of private energy service companies and publicly funded energy efficiency centers. The projects it finances will foster the development of energy service companies to improve energy efficiency in the public sector. In addition, the IBRD will cooperate with the European Bank for Reconstruction and Development and the IFC (see below), which will take the lead in developing private energy service companies, with a focus on industrial enterprises.

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• The IFC is implementing only one project: using Global Environmental Facility resources, it recently set up a US$5 million facility in Hungary that provides partial credit guarantees to support lending by commercial banks for projects that improve energy efficiency. The project also provides technical assistance for the preparation of specific energy-efficiency investments.

• Jointly with the European Bank for Reconstruction and Development and a private sponsor (Honeywell), the IFC is establishing a facility that will invest US$25 million in energy service companies in the Europe and Central Asia region (in Poland, Hungary, Russia, Bulgaria, and Ukraine), in China, and possibly in other countries. The first set of projects proposed for Poland focuses on efficiency improvements in public buildings that rely on district heating, but the energy service companies are expected to be active in the industrial sector as well.

**Renewable Energy Resources**

Substantial unutilized renewable/alternative energy resources (among them geothermal, solar, biomass, wind, small hydro, and coalbed methane) exist in several countries in the region.

**Key Issues**

A number of issues need addressing:

• The benefits of using renewable energy resources are global—no net carbon dioxide emissions—while the costs are local.

• Even when the expected costs equal the cost of hydrocarbons, the technology is more risky.

• These resources are considered marginal by key policymakers or are unknown to them, and they therefore do not attract the necessary attention.

• Traditional energy producers are often reluctant to turn to renewable resources.
A distorted regulatory framework and subsidies that favor nonrenewable energy resources and technologies reinforce this conservatism.

World Bank Group-Supported Policies

World Bank Group policies in this area address three principal issues:

- The regulatory framework needs to be improved at the local, regional, and global levels, by ensuring that the prices of traditional energy sources reflect their negative environmental impact.

- Decision makers need to be more aware of alternative technologies and approaches.

- Alternative energy resources that have a good chance of becoming commercially viable following an initial subsidy commensurate with expected global benefits should be promoted.

Work Program


- The current IBRD portfolio includes two projects under implementation and four under preparation. All receive or expect to receive support from the Global Environment Facility.

- In view of the growing concerns about global warming and the substantial scope for further utilization of alternative energy resources, increased efforts are planned to help Europe and Central Asia identify and finance greenhouse gas reduction projects. The IBRD has identified four projects that utilize biomass, solar, and geothermal energy resources.

- The IBRD cooperates closely with the Global Carbon Initiative. It has carried out several country studies that investigate the potential for reducing greenhouse gases. The studies are expected to identify additional renewable energy projects that the Prototype Carbon Fund could support in combination with IBRD lending.

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- The IFC has no ongoing projects in the energy subsector in the region. Future privately sponsored projects, however, may benefit from the Renewable Energy Efficiency Fund, a global investment fund that supports renewable energy and energy efficiency projects around the world. The fund is currently being set up by the IFC (which can provide up to US$15 million) and the Global Environment Facility (up to US$30 million). In addition, investors recently approached the IFC about financing small hydropower plants in Georgia.
CHAPTER IV. RISKS AND MITIGATION MEASURES

The major country risks that affect the World Bank Group’s ability to implement the proposed work programs include:

- In the first group of countries (Belarus, Bulgaria, Moldova, Romania, Russia, and Ukraine): macroeconomic and financial instability, persistence of inadequate collection of payments and of barters, and the absence of sustained political commitment to energy sector reforms in the face of opposition from "old style" line ministries, corrupt bureaucrats, state-owned and private monopolies, and affected workers who do not trust the ability of governments to mitigate the negative social consequences of reform.

- In the second group (Albania, Armenia, Bosnia, Croatia, Georgia, and FYR Macedonia): general political instability leading to paralysis of governments and withdrawal of donor assistance, inadequate collection of payments, and a weakening commitment to reform as memory of the energy crisis fades.

- In the third group (the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia, and Turkey): sustained barriers to entry because of inadequate regulatory frameworks, the low priority governments assign to improved energy efficiency and the utilization of renewable resources, and reduced interest in the World Bank Group’s financial instruments because its processing of project applications is slow and bureaucratic.

- In the fourth group (Azerbaijan, Kazakhstan, Kyrgyz Republic, Turkmenistan, and Uzbekistan): stalemates among the major players in oil/gas transport, a significant drop in the international prices for oil and gas that has meant less than expected revenues for sponsors (including governments) of pipeline projects, and the low priority assigned to the development of regional trade in electricity.

Regional initiatives to improve the sharing of reform experiences across countries, policies that address the social impact of higher cost recovery and downsizing, mobilization of support from the Global Environmental Fund and the Global Carbon Initiative, improved marketing of new products (such as guarantees and adaptable program loans), and increased client focus are all important components of the World Bank Group’s proposed strategy to reduce political risks and increase the attractiveness of its products and services. Nonetheless, the ability of the World Bank Group to mitigate risks is limited and requires considerable flexibility in work programming.
The main risks relating to internal and external partnerships are:

- Inadequate coordination among the IBRD, IFC, and MIGA, so that the different types of support the World Bank Group offers are compartmentalized, with an associated loss of synergies.

- Decreasing support for technical assistance and reduced interest in joint project preparation/implementation among the bilateral agencies (including Japan, the United States Agency for International Development, the United Kingdom Know How Fund), and among multilaterals (such as the European Union, European Bank for Reconstruction and Development, and Asian Development Bank), so that there are now major gaps in the World Bank Group's administrative budgets, clients receive conflicting messages, and the impact of projects on development is reduced.

The proposed strategy addresses these risks through a new mechanism for internal coordination—semi-annual joint program reviews, stronger partnerships with multi- and bilateral agencies, and the development of new partnerships with multinational companies and nongovernmental organizations.
CHAPTER V. MEASURING PROGRESS

The World Bank Group will review implementation of its strategy annually. To measure progress, it will rely on country and regional “scorecards” with numerical indicators (table 1). The country scorecards will assess both the progress of individual countries annually against a common set of benchmarks, and the World Bank Group’s contribution to the progress achieved.

Designated IBRD energy team leaders will complete the country scorecards, with input from IFC and MIGA staff. The scorecards will be circulated to the country directors for comment and will be finalized during the joint IBRD/IFC/MIGA program review. The assignment of individual ratings will follow the guidelines in table 1. A sample country scorecard, without assigned ratings, is shown in table 2.

Table 1. Country Scorecard Guidelines

<table>
<thead>
<tr>
<th>Country rating:</th>
<th>0</th>
<th>No progress</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>Minimal progress in some subsectors</td>
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<tr>
<td></td>
<td>2</td>
<td>Significant progress in several subsectors or major progress in some subsectors</td>
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<tr>
<td></td>
<td>3</td>
<td>Major progress in all or most subsectors</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>World Bank Group rating:</th>
<th>0</th>
<th>No World Bank Group involvement</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>Minimal support (financing/guarantee for a small project or technical assistance only) from the World Bank Group</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Substantial support (financing/guarantee for a large project or a small project plus technical assistance)</td>
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<tr>
<td></td>
<td>3</td>
<td>Major support Coal Sector Adjustment Loan, or several projects, or a large project plus technical assistance)</td>
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</tbody>
</table>

Note: A project is considered large if the total financial support (loan, equity, guarantee) it gets from the World Bank Group is higher than US$1 multiplied by the population of the country. Only projects under implementation or approved in the last three years are taken into account.

Source: World Bank

The ratings on the scorecard for the region as a whole will be calculated as the weighted average of the individual country ratings (the weights being the population of each country).
<table>
<thead>
<tr>
<th>(Name of Country)</th>
<th>Progress Benchmarks</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Date)</td>
<td>World Bank Country Group</td>
<td></td>
</tr>
<tr>
<td>1. Demonopolization and Regulation</td>
<td>Unbundling vertically integrated monopolies</td>
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<tr>
<td></td>
<td>Privatizing energy producers and suppliers</td>
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<tr>
<td></td>
<td>Establishing autonomous regulatory bodies</td>
<td></td>
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<tr>
<td>2. Prices/Fiscal Policies</td>
<td>Setting prices at full cost recovery levels and eliminating cross-subsidies</td>
<td></td>
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<tr>
<td></td>
<td>Cutting off nonpayers and eliminating noncash payment modes</td>
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<tr>
<td></td>
<td>Eliminating production subsidies and closing uneconomic enterprises</td>
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<tr>
<td>3. Foreign Trade</td>
<td>Opening the domestic energy markets to external competition</td>
<td></td>
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<tr>
<td></td>
<td>Liberalizing energy exports and eliminating export taxes</td>
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</tr>
<tr>
<td></td>
<td>Constructing/rehabilitating cross-country pipelines and electricity interconnections</td>
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<tr>
<td>4. Investment Policy</td>
<td>Relying on energy companies to raise investment funds in the coal, oil/gas, electricity, and district heating subsectors</td>
<td></td>
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<tr>
<td></td>
<td>Supporting investments in energy efficiency and renewable resources</td>
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<tr>
<td></td>
<td>Providing noncommercial risk guarantees to private investors/lenders</td>
<td></td>
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<tr>
<td>5. Social Protection</td>
<td>Providing assistance for the unemployed, including financial support</td>
<td></td>
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<tr>
<td></td>
<td>Transferring social service functions from enterprises to local governments</td>
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<tr>
<td></td>
<td>Supporting poor households through lifeline tariffs or means-tested subsidies</td>
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<tr>
<td>6. Environmental Protection</td>
<td>Introducing and enforcing cost-effective pollution limits</td>
<td></td>
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<tr>
<td></td>
<td>Carrying out environmental impact analysis for all investments</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mainstreaming environmentally friendly technologies and practices</td>
<td></td>
</tr>
</tbody>
</table>

Source: World Bank
Recent World Bank Discussion Papers (continued)

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