

Renewing Our Energy Business

**World Bank Group Energy Program
Implementation Progress Report 2001-03**



THE WORLD BANK
GROUP



The Energy and
Mining Sector Board

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The World Bank Group

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FOREWORD

A topical briefing was made to the World Bank Group's Board of Executive Directors on *The World Bank Group's Energy Program: Poverty Alleviation, Sustainability and Selectivity* in May 2001. The Program confirmed that energy issues are at the core of the World Bank Group's activities for promoting growth and reducing poverty. It described how the World Bank supports a range of policy measures by governments to implement four lines of business: helping the poor directly; improving macroeconomic and fiscal balances; promoting governance and private sector development; and protecting the environment. Instruments and operations to support these business lines were detailed in the Energy Program.

This publication reports on progress since May 2001 in implementing the Energy Program. World Bank Group financing, sector analytical work and technical assistance to support the Energy Program has rebounded in the first two years of implementation and is poised to grow. The Infrastructure Action Plan approved by the Board in July 2003 reinforces the Program as it was developed in response to strong client demand for infrastructure including energy infrastructure and energy services. The challenges of sustainable sector development in developing countries are great and include ensuring that financing is made available for needed infrastructure projects, that the full range of options for public and private sector provision of energy infrastructure services are available, that faster progress is made in scaling up access to energy services including from renewable energy and that the financial, social, institutional and environmental performance of energy suppliers is improved.

We will continue our efforts to address these and other challenges and to work with our clients, together with development partners, in order to integrate energy into development programs and to help create a better and more sustainable world for all.

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Chairman, Energy and Mining Sector Board

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ACRONYMS AND ABBREVIATIONS

AAA	Analytical and Advisory Activities
AFRREI	Africa Rural and Renewable Energy Initiative
APL	Adaptable Program Loan
ASTAE	Asia Alternative Energy Program
CAS	Country Assistance Strategy
CDM	Clean Development Mechanism
CODE	Committee on Development Effectiveness
DEC	Development Economics Vice Presidency
DECDG	Development Data Group in DEC
ERs	(greenhouse gas) emission reductions
ESMAP	Energy Sector Management Assistance Programme
ESW	Economic and Sector Work
GEF	Global Environment Facility
GPOBA	Global Partnership on Output-Based Aid
GVEP	Global Village Energy Partnership
HR	Human Resources
IAP	Infrastructure Action Plan
IBRD	International Bank for Reconstruction and Development
ICA	Investment Climate Assessment
IDA	International Development Association
IFC	International Finance Corporation
IMF	International Monetary Fund
INF VP	Infrastructure Vice Presidency
KM	Knowledge Management
MIGA	Multilateral Investment Guarantee Agency
MDGs	Millennium Development Goals
OBA	Output Based Aid
OED	Operations Evaluation Department
OPCS	Operations Policy and Country Services
PAD	Project Appraisal Document
PCF	Prototype Carbon Fund
PER	Public Expenditure Review
PFG	Project Finance and Guarantees
PPIAF	Public-Private Infrastructure Advisory Facility
PRSC	Poverty Reduction Support Credit
PREM	Poverty Reduction and Economic Management Network
PRSP	Poverty Reduction Strategy Paper
PSAL	Programmatic Structural Adjustment Loan
QAG	Quality Assurance Group
REDI	Recent Economic Developments in Infrastructure
RPTES	Regional Program for the Traditional Energy Sector
SIL	Specific Investment Loan
SAL	Structural Adjustment Loan
SECAL	Sectoral Adjustment Loan
TA	Technical Assistance
ETFP	Energy Trust Fund Programs
WBG	World Bank Group (IBRD, IDA, IFC, MIGA, ICSID)
WSSD	World Summit on Sustainable Development

EXECUTIVE SUMMARY

The World Bank Group's Energy Program presented to the World Bank Board of Executive Directors in a topical briefing in May '01 envisaged important adjustments in the way the WBG would operate and anticipated a broad application of different lending and non-lending instruments to achieve its goals. Since May '01 there has been encouraging progress within the WBG in making these adjustments, although significant challenges remain. The Infrastructure Action Plan approved by the World Bank Board in July, '03 gives new impetus to the adjustments necessary within the WBG in order to maximize funding for infrastructure from all sources by pinpointing a variety of new instruments, business lines as well as the use of combinations of loans, investments and guarantees from across the WBG. The Program's implementation has been supported by a credit line to support identification of additional lending deliverables, by a review that examined the reasons for the decline in Bank Group's lending for infrastructure in middle-income countries and by other internal developments. Meanwhile external developments continue to shape the Program's implementation. They include difficulty in attracting private investment in the energy sector in many countries, the key role of poverty reduction strategies in determining development assistance for the poorer countries, an independent review of the WBG role in the extractive industries and increased focus on renewable energy for development.

Working with the Client

"Enhance work with clients to support energy strategies within their development frameworks.." Energy Program, May 2001

Progress

- **Sector reform.** Sector reform, encompassing policy and institutional design and governance, remains the basis of Bank and client dialogue. The strategic directions for WBG engagement in the sector that were formalized in the Energy Program as four lines of business (helping the poor directly, improving macro/fiscal balances, promoting good governance and private sector development and protecting the environment) are now mainstream and have been integrated by staff into regional energy programs.
- **Client engagement.** Bank energy teams have been increasingly using participative processes in policy dialogue and have found these to be effective in understanding client needs, developing client ownership and in seeking client inputs to the design of WBG energy sector support.
- **CASs & PRSPs.** Sector management attention and staff engagement in the CAS and PRSP processes have been factors in better integration of energy sector issues in recent CASs and PRSPs. Still, relatively few PRSPs demonstrate a comprehensive view of the contribution of the energy sector to poverty reduction.
- **Internal collaboration.** Active collaboration of energy, PREM and IMF teams has been effective in ensuring consistency of adjustment and multi-sector instruments (e.g. SACs, SALs, IMF Standby Credits) with energy sector IBRD/IDA loans and programs. For example, this type of coordination has been important in addressing the adverse macroeconomic effects of sector subsidies as well as achieving milestones in the process of privatization of energy SOEs.

- **Petroleum revenue management.** Addressing issues of governance in petroleum revenue management is another area where the Bank is now more active in working with clients than in the past. In this regard dissemination of good practices through workshops in client countries, through participation in the Extractive Industries Review, through technical assistance and advisory work, as well as through closer working relationships with the IMF staff to ensure consistent advice to clients have all been features of the Bank's work.
- **Mining.** With respect to mining, the WBG has expanded its work beyond traditional TA aimed at developing an enabling environment for mining, to providing more focus on issues such as sector governance and local economic development. This expanded area of activities will also include work in the coal sub-sector on a selective basis.

Challenges

- **Expanding engagement with clients.** Sustaining and expanding Bank engagement with clients on energy sector reform in CAS and PRSP processes, in cross-institutional collaboration within the Bank, as well as with the IMF will require additional staff seasoned in energy development issues and able to integrate a broad agenda of energy issues that are at the interface of poverty reduction, governance, macro and fiscal management and the environment.

Deployment of WBG Instruments

"Provide advisory activities & technical assistance; deploy & combine instruments for maximum impact; expand adjustment & programmatic lending and cross-sectoral operations.." Energy Program, May 2001

Progress

- **IBRD/IDA energy sector investment projects.** Despite a modest increase in the number of Bank/IDA energy investment operations in the period FY01-03 compared to the prior 3-year period, investment amounts remain below those during most of the 1990s. The pipeline of energy sector projects indicates that 22 investment operations for \$1.4 billion are being developed for Board consideration in FY04, and 19 operations for \$1.7 billion in FY05. The pipeline represents a strong rebound from the levels of the past five years when lending averaged about US \$1 billion per annum. It should be noted that investment in energy components in the projects of non-energy sector projects totaled about \$450 million in FY02 and FY03 and that similar volumes are forecast in FY04 and FY05.
- **IFC investment projects.** Gross IFC investment in the power sector has been at a fairly constant level during the period, with 7 or 8 investment operations approved each year since FY01 averaging about \$650 million per annum. A total of 22 operations were approved in the 3-year period FY01-FY03. In the petroleum sector, 15 operations for a total of \$666 million gross IFC investment were approved. During the period however, there have been important changes in the nature of IFC's activities. With limited financing opportunities for "greenfield" power plants, it has focused more on corporate transactions, refinancing, restructuring and acquisition finance, dictated by the rapid fall-off in co-financing for power projects in developing countries from commercial sources and international capital markets.

- **MIGA guarantees.** Since 2000, the number of MIGA guarantee operations in the sector has sharply increased. Annual transactions have been about 29 on average and total \$1.3 billion from FY01 to FY03 although MIGA business, like IFC's, has been impacted by the decline in flows of private capital in the sector.
- **IBRD/IDA guarantees.** IDA partial risk guarantees have been applied in projects in Vietnam and Mozambique and other countries with several others under preparation. The instrument has become increasingly important in mobilizing private capital.
- **Analytical & Advisory Activities (AAA).** The number and amount of AAA (recording of AAA is weak) appears to have increased in all regions. However, separate and uncoordinated reporting and monitoring of AAA make consolidated and systematic assessment of its impact problematic.
- **Streamlining IBRD/IDA project processing.** A third of IBRD/IDA projects approved since '90 took more than 2 years to prepare. A Bank-wide drive begun in '02 and led by OPCS to streamline and speed up Bank procedures and processes has already shown positive results e.g. the agreement by OPCS and ESSD to integrate fiduciary, environment, and social staff into project teams. More recently a number of energy projects have been prepared on an accelerated timetable whose quality was rated highly.

Challenges

- **Reducing transaction costs.** Delivering the enhanced program envisaged by the Energy Program and the Infrastructure Action Plan (IAP) will require that high transaction times and costs for the client are reduced. While representing an onerous burden for all countries they are especially a disincentive for middle-income countries.
- **Simplifying procedures.** The IAP pinpoints the challenges that management will continue to deal with in delivering the expanded program envisaged by the Energy Program e.g. addressing institutional policy constraints; developing operational tools to support infrastructure finance; simplifying Bank procedures; and standardizing the interpretation and application of safeguards. Particular challenges in the energy sector will involve designing operations to support energy access, integrating energy in multi-sector programmatic loans in IDA countries and harmonizing project review procedures with GEF.
- **Clarifying private and public sector roles.** Lack of clarity on the roles of the private and public sector in infrastructure service delivery, identified as one factor in the decline in Bank energy lending, is an issue that the *Guidance Note on Public and Private Sector Roles in Electricity* addresses. The Note identifies expanded opportunity for WBG support to the public sector in reform oriented countries. It provides guidance to WBG staff on assessing the suitability of available options for public-private roles in the financing and provision of electricity, and the main steps which staff should take to analyze these options. The Note links the different public-private models with appropriate WBG instruments, including project-specific, sector-wide and broader interventions. Given the variations in context across Bank client countries, prescriptive one-size-fits-all recommendations are not appropriate and a challenge will be to operationalize the guidance in different country contexts.
- **IFC.** In the power sector, a challenge for IFC is to maintain the presence of traditional private investors in ongoing businesses while identifying new regional and local sponsors. IFC is likely to focus on more stable countries where sector reforms have a credible track record.

- **Energy Trust Funds.** Past under-investment in country level diagnostic work has contributed to reduced energy lending. To increase the impact and use of AAA, energy-related TF programs and regional and anchor managed ESW may be better coordinated.
- **Sector diagnostic tools.** The IAP promotes the use of standardized infrastructure assessment tools. Methodologies to support these tools - such as for carrying out regulatory assessments and results monitoring - will need to be completed and then mainstreamed. Tools such as Poverty Assessments can be employed to more systematically analyze the distributional impacts of energy sector policies.

Staff Skills

"Take actions to improve skills mix through recruitment, training, coaching, joint teams and incentives.." Energy Program May 2001

Progress

- **Staff resources.** From FY99 through FY03, the number of energy sector staff in the Bank declined by about 23%. In response, there has been a concerted effort by management and the Sector Board to address skills mix and skills deficit issues through batch recruitment, managed rotations, and by developing a longer term HR strategy to address the projected retirement of senior sector staff. The recruitment effort has focused on hiring staff with extensive experience in energy development issues who can integrate a broad agenda of energy sector issues at the interfaces of poverty reduction, governance, macroeconomic and fiscal management, and the environment.

Challenges

- **Budget constraints.** Sector management will need to reconcile recruitment needs for the longer term delivery of the scaled-up program envisaged by the Energy Program and the IAP with financing and staff work programs that are anchored in the short term. The Sector Board will need to continue to manage strategic staffing plans aggressively.

Knowledge Management

"Strengthen knowledge management & promote external partnerships to access knowledge and build capacity.." Energy Program May 2001

Progress

- **Energy Program dissemination/partnerships.** The Program itself has been widely disseminated and communicated both internally and outside of the Bank. Dissemination of emerging sector practice and analytical findings through publications and advocacy at conferences and international fora has benefited from the Program. A publications series, the Energy and Mining Sector Board Discussion Papers, was launched and has been in high demand. Rapid Response, with the support of energy staff, provides both free and fee-based access to the Bank's knowledge resources and expert advice across the range of infrastructure issues.

Challenges

- **KM strategy development.** An OED institution-wide review of knowledge management found that the KM strategy of the Bank does not adequately link knowledge sharing programs to lending and non-lending processes and is also deficient in quality control, time bound goals, performance indicators and audience focus. The OED evaluation called for effort to institutionalize knowledge management by applying its tools directly to the Bank's core business processes and to integrate it in country programs through the CAS. A review will be carried out in FY04 by INF VP of quality enhancement, knowledge and learning services activities that together with a separate assessment of INFVP Global Programs will provide recommendations to management.

Improving Development Effectiveness

"manage development effectiveness risks better.." Energy Program May 2001

Progress

- **Project impacts.** Development effectiveness of IBRD/IDA closed energy projects, assessed on criteria of satisfactory outcome, likely sustainability and institutional development impact has improved through '03 and is now on a par with the average for all Bank lending. The quality of a sample of projects entering the portfolio, on average, lagged the Bank average for all projects with weaknesses for example in implementing agencies capacity/commitment and institution building arrangements.
- **Formal sector evaluations.** Two OED evaluations of the WBG's assistance in the electric sector and in the extractive industries were completed during FY02-03. These will shape projects and programs going forward contributing to improved development effectiveness.

Challenges

- **Staff and management resources for evaluations.** Engagement in formal sector wide evaluations and reviews of projects by the Inspection Panel requires substantial commitment of staff and management resources and competes with scarce resources for project preparation and supervision.

Monitoring and Evaluation

"Strengthen monitoring and reporting to measure progress towards program outcomes.." Energy Program May 2001

Progress

- **Project M&E.** A review of infrastructure projects in FY03 found there to be systemic weaknesses in project M&E that were common for all the infrastructure sectors. For example it found that projects had objectives whose relevance to country objectives were unclear and that indicators were often too many and too vague (especially with regard to institutional change) and didn't capitalize on global monitoring. Compared to earlier projects, energy

projects approved in FY02 and FY03 incorporate better M&E features. For example, recent projects were more likely to define explicit project outcomes in relation to country outcomes e.g. *cost of electricity services to low income consumers* and *increased private investment* in projects that promote access and market reform.

- **Global monitoring.** Global monitoring, the measurement of country outcomes in which the energy sector has an important impact has advanced in several areas: *Investment Climate Assessments* for example provide comparable cross-country indicators of enterprise sales lost due to unreliable power and average tariffs; survey instruments such as the *Demographic and Health Survey* (DHS-USAID) and the *World Health Survey* (WHS-WHO) and the *Living Standards Measurement Survey* (LSMS-World Bank) now include questions on the types of cooking fuels used by households in addition to questions on electricity use that have been standard for some time; World Development Indicators, in its 2003 edition, includes an expanded set of energy related indicators provided by UN agencies and others e.g. for air quality and access. In light of the growing availability of country energy access data, IDA is considering incorporating an energy indicator in the IDA14 results measurement system.
- **Monitoring implementation of the Energy Program.** Monitoring the implementation of the Program is a distinct exercise from the project, country, and global measurement issues outlined above. Monitoring of the Program focuses on internal WBG elements identified as key to improving the way the Bank does business in the energy sector. Key elements in tracking Program implementation are: relevance to implementation of internal and external changes since the Program was prepared; assessment of progress in terms of *inputs* such as new sector wide evaluations, alignment of financing and staffing *outputs* such as ESW and lending and *outcomes* such as achievement of goals; integration of energy into CASs and PRSPs, and internal and external collaborative efforts.
- **Accountability for Program implementation.** Principal responsibility for implementing the Energy Program rests with country departments and sector units responsible for energy under the direction of regional management teams. The Network Vice Presidency, Sector Board, Anchor, and thematic groups provide a range of support functions such as strengthening cross-sectoral linkages; coordinating the corporate agenda, reporting on sector performance; generating and disseminating knowledge; and strengthening partnerships with external agencies. Regional management teams play a key role in validating and adapting sectoral assistance strategies, selecting focus countries in which to scale up activities, allocating resources for staffing, and ensuring that energy sector development is integrated into the broader development agenda.

Challenges

- **Methodological tools and development of a consistent Results Framework** The objectives of energy sector projects and programs will need to continue to demonstrate their contribution to country outcomes. It may be sometimes challenging to measure objectives of institutional change (often contained in energy projects with reform components) and to link these to country “outcomes” such as increased access, better investment climate, environmental benefits and better fiscal performance. The IAP promotes the use of standardized infrastructure assessment tools and work has begun on methodological development e.g. for regulatory assessment that supports these tools. Better guidance in designing project M&E systems should be a product of development of these methodologies.

- **Work program for global monitoring.** The Development Data Group (DECDG) has established a work program with the assistance of the Energy Unit (EWDEN) with the objective of extending the coverage of harmonized country energy indicators. The effort to expand the number of indicators relevant to the Program and to ensure good country coverage should not be underestimated.
- **Future monitoring of Program implementation.** The monitoring system for reporting on implementation of the Energy Program is still evolving. This report represents the first effort after two years of implementation to report on progress. In future, at the closure of each fiscal year, a consolidated assessment of progress with the implementation of the Bank's key sectoral and thematic strategies will be prepared. To facilitate preparation of the consolidated SSIU report, the individual sectors will provide short reports according to a common format covering achievements and challenges, the impact of external events, the status of outcome indicators as well as the status of Bank inputs and outputs (e.g. reflection of sector strategy in country strategies and ESW) .

Looking Forward – Focus of WBG work program in FY04 & FY05

- **Focus of work programs.** The work programs of the World Bank regional energy units, IFC and the mining and oil and gas global product groups will continue to support projects that promote sector reform and sector investment for delivery of affordable and sustainable energy services. The work programs will emphasize energy access, governance and transparency of oil and gas revenues, gas flaring reduction and scale-up of renewable energy.
- **WBG Instruments.** Current indications are for a strong rebound in demand for WBG investment, analytical work and technical assistance in the sector in FY04, FY05 and beyond. Innovations and streamlining in the deployment of WBG instruments are underway or planned such as in deployment of guarantees. Work will continue to explore the different options for public-private roles in the financing and provision of electricity services. Work will continue to strengthen cooperation with development partners and to enhance the use of energy Trust Fund programs. GEF will increasingly leverage WBG investment lending in preference to freestanding projects and the Carbon Finance business is expected to grow with additional commitments from OECD countries currently being negotiated.

1. INTRODUCTION

The World Bank Group's (WBG) Energy Program¹ was presented in a topical briefing to the World Bank Board of Executive Directors on May 22, 2001. It is consistent with the Infrastructure Action Plan approved by the World Bank Board in July, 2003².

The World Bank Group Energy Program

1.1 To realize its vision for energy in the developing world, the WBG, in its Energy Program, adopted a comprehensive approach that focuses on four business lines (Box 1.1).

Box 1.1 Energy Program Business Lines

Improve access of the poor to modern energy services by:

- reducing the cost and improving the quality of energy supplied to low-income households and for social services
- ensuring that energy subsidies are targeted at and reach the poor

Improve macroeconomic and fiscal balances by:

- rationalizing energy taxes
- enhancing effective payment by all energy users to eliminate operating subsidies to state-owned enterprises

Promote Good Governance and Private Sector Development by:

- divesting assets to strategic investors in a socially responsible and corruption-free way
- catalyzing private investments by liberalizing entry to energy markets
- strengthening the voice of consumers and communities

Protect the Environment by:

- removing market and regulatory barriers to renewable energy and energy efficiency investments
- reducing gas flaring, facilitating carbon trading and joint investments to reduce GHG emissions

1.2 Instruments and operations to support these business lines were detailed in the Energy Program and quantified objectives to be reached by 2010 for realization of the vision were identified.

External Developments

External developments since 2001 continue to influence the Bank's energy business. They include:

¹ *The World Bank Group's Energy Program: Poverty Alleviation, Sustainability and Selectivity*, Topical Briefing, May 2001.

² www.worldbank.org/infrastructure/files/InfrastructureActionPlan.pdf

1.3 It is now recognized that under the poor governance standards found in many developing countries, pure public financing of electricity infrastructure and provision of electricity services has failed to adequately support economic and social development. It is now also recognized that the private sector can deliver efficient investments and improved services provided that the right business incentives and legal and regulatory arrangements are in place to attract investment. However, private investment in the power sector in developing countries peaked in 1997 and has since declined to less than one sixth of its level then. The decline is in part due to financial problems faced by international power investors in their home markets as well as a downturn in the business cycle (the flows of capital to the power sector in developing countries has mirrored an overall reduction in investment flows). In addition, difficulties in sustaining reforms to establish the power sector on a commercial footing in some countries has contributed to the withdrawal of investors and has produced a more difficult climate for attracting private investment in developing country power sectors. This in turn has led to a search for practical solutions for public-private partnerships for financing of electricity infrastructure and provision of electricity services that lie between the purely public and purely private models.

1.4 The shared goals of development (articulated in the Millennium Development Goals) have taken center stage in the development community's drive to assist countries achieve poverty reduction. The need for energy services to reduce poverty and increase growth has received wide recognition in this context and has been articulated in NEPAD and the WSSD.

1.5 In anticipation of progress towards the ratification of global environment agreements to limit emission reductions, market instruments for emission reductions are being tested and carbon finance (PCF and other facilities) has become an important aspect of the WBG's energy business.

1.6 The 3rd World Water Forum Ministerial Conference in March 2003 recognized the role of hydropower as one of the renewable and clean energy sources, and that its potential should be realized in an environmentally sustainable and socially equitable manner .

1.7 The Extractive Industry Review, an independent review to produce a set of recommendations that will guide involvement of the World Bank Group in the oil, gas and mining sectors was launched in 2001 and presented its final consultation report in January 2004.

Internal Developments

Important recent internal WBG changes will strengthen implementation of the Energy Program. They include:

1.8 The Infrastructure Action Plan (IAP) that was presented to the World Bank Board in July 2003 addresses internal weaknesses that have led to a decline in the Bank's infrastructure work. These include: under-investment in country diagnostic work; a lack of clarity and mixed corporate signals on the roles of the private and public sector in infrastructure service provisions; high project preparation costs; and weak incentives. The IAP outlines a series of management actions to address present constraints including actions to further develop instruments for risk mitigation, and actions to simplify procedures and to standardize interpretation of safeguards.

1.9 An Infrastructure Economics and Finance department was created to develop best practice for private-public partnerships for infrastructure service delivery public and private partnerships, to further the agenda, and improve capacity across the Bank, in areas related to infrastructure economics and regulation, including better results measurement; and to develop new models for infrastructure finance and risk mitigation, including guarantees.

1.10 Lending for infrastructure (including energy infrastructure) was prominent in the discussions of the Task Force on Middle Income Countries. The underlying reasons for the Bank Group's decline in infrastructure lending in these countries was part of its discussions. It's proposals relating to increasing CAS flexibility; moving towards country systems for fiduciary and safeguard requirements; streamlining investment lending conditionality; and developing more sophisticated financial products, is likely in the future to enhance the Bank Group's ability to respond to the specific needs of middle-income countries.

1.11 For IDA countries PRSPs have taken center stage. PRSPs are a requirement for countries in order to receive concessional assistance from the World Bank through IDA and the IMF through the Poverty Reduction and Growth Facility (PRGF) and they reinforce consideration of poverty reduction in country energy policies.

1.12 The need for greater focus on results (monitoring and evaluation in projects and programs) came to the fore in 2002 when the Development Committee met during the Annual Meetings to discuss a conceptual framework for Better Measuring, Monitoring and Managing for Development Results. Since then there has been renewed emphasis on results in projects and programs as well as at the country and global levels.

1.13 Bank management made available a credit line to support identification of additional lending deliverables. \$8 million was allocated to infrastructure which led to an increase in AAA.

1.14 IDA introduced a pilot envelope for regional projects of up to \$450 million per annum during FY04-05. In recognition of the significant positive externalities of regional projects, two thirds of the credit amount will be from general IDA resources. Individual country allocations will normally cover the remaining one third of the project cost wherever feasible.

Implementation of the Energy Program

1.15 The Energy Program identified a set of key actions and adjustments in the way the WBG would conduct its energy business to reach its longer-term goals as set out in Table 1.1 below.

Table 1.1 Implementation Matrix

Working with the Client	Enhance work with clients to support energy strategies within their development frameworks
Deployment of WBG Instruments	Provide advisory activities & technical assistance; deploy & combine instruments for maximum impact; expand adjustment & programmatic lending and cross sectoral operations
Staff Skills	Take actions to improve skills mix through recruitment, training, coaching, joint teams and incentives
Knowledge Agenda	Strengthen knowledge management & promote external partnerships to access knowledge and build capacity
Development Effectiveness	Better manage development effectiveness risks and strengthen monitoring and reporting to measure progress towards Program outcomes

Methodology & Structure of the Report

1.16 This Implementation Progress Report (IPR) has been prepared to take stock of Program implementation. The report's intended audience is Bank staff, counterparts in client countries, external partners and Bank senior management and has the common features of WBG sector strategy IPRs³:

- relevance of internal and external changes since the Program was prepared
- assessment of progress in terms of inputs (e.g. new sector wide reviews), outputs (e.g. ESW and lending) and outcomes (e.g. achievement of goals)
- integration of energy into CASs and PRSPs
- alignment of financing and staffing with regional energy programs
- partnerships and funding

1.17 The monitoring system for implementation is still evolving and this report represents the first effort after two years of Energy Program implementation to report on progress. The report uses quantitative indicators where these are available and augments these with qualitative findings. The examples used are for illustrative purposes.

1.18 Each of the regional energy sector units, MIGA and IFC prepared short reports as inputs for this report. The reports outlined how their energy programs have evolved since FY00, focusing on implementation constraints and noting where progress was being made. Interviews with staff provided additional insights.

1.19 A literature review was carried out (a bibliographical list of documents reviewed is in Annex 3). The principal documents reviewed included:

- The findings of various evaluations of ESW and investment lending. They included the *Annual Review of Development Effectiveness (OED)*, *Quality at Entry (QAG)*, *Annual Review of Portfolio Performance (QAG)* and various *Country Assistance Evaluations (OED)*
- Evaluations of processes relevant to the implementation of the Energy Program. These included the *Report of the Advisory Panel on Assessing Economic and Sector Work (QAG, May*

³ Sector Strategy Papers: Stocktaking and Future Directions. CODE2003-0067 October 20, 2003

2002) and *Sector Strategy Papers: Stocktaking and Future Directions* (prepared by OPCS for CODE, October 2003).

- CAS documents were examined and rated on how well they integrated discussion of the priority energy issues in the countries. The sample consisted of countries for which a new CAS had been prepared since June 2001 *and* whose prior CASs had been assessed in 2000 at the time the Energy Program was prepared.
- PRSP documents were examined and rated on how well they integrated discussion of the priority energy issues. The sample consisted of six PRSPs which had been presented to the World Bank Board before August '02 and another six which had been presented since August '02.
- Project appraisal documents for projects approved since the Energy Program was adopted were examined to assess how well project objectives are aligned with the Program.

1.20 The report is organized in sections (Sections 2 to 6) following the outline of the Implementation Matrix (Table 1.1). Section 7 provides an overview of the work program in FY04 and FY05. Annexes provide regional overviews; portfolio data; a bibliography of documents reviewed; a list of energy related websites; and a bibliography of energy publications.

2. WORKING WITH THE CLIENT

“Enhancing work with clients to support energy strategies within their development frameworks..”
Energy Program May 2001

Supporting Client Countries in the Development of Energy Strategies

2.1 *WBG-Client relationships.* Sector management and staff report that WBG energy teams have increasingly adopted participative processes in policy dialogue and have found these to be effective in understanding client needs, developing client ownership and in seeking client inputs to the design of WBG energy sector support. Illustrations of these processes have been: workshops in Vietnam to reach a common understanding of the essential elements of a long term energy strategy; dialogue with decision makers in Indian states on sector reform implementation; and a series of discussion forums in Africa with multi-sector participation of decision makers to explore the role of energy in social and infrastructure service delivery.

Integrating Energy in Country Assistance Strategies

2.2 *Energy team engagement.* Integration of country energy strategies in country-owned development frameworks is key to the WBG’s program in the energy sector. Regional sector management reported that energy teams are now more systematically engaged in the PRSP & CAS processes.

2.3 *CASs.* The number of CASs assessed to be “good practice” has improved with respect to the last assessment in 2000. 26 CAS documents were assessed⁴. Whereas in 2000 only one CAS had a thorough discussion of poverty issues and 12 had little or none, in 2003, 4 CASs were assessed as “best practice” and just 4 CAS’s had reference to

Table 2.1

Assessment of energy content in selected Country Assistance Strategies								
Rating	Poverty (access & affordability, linkage to health & education)		Macro-economic issues or impacts of the sector		Issues of Governance & inst. capacity, PSD & regulation		Environmental issues or impact of the sector	
	2000	2003	2000	2003	2000	2003	2000	2003
	Number of countries							
0	12	4	17	11	3	1	12	6
1	2	6	2	6	3	1	6	4
2	11	12	4	6	12	10	5	8
3	1	4	3	3	8	14	3	8
<i>Note: rating scale is 0 (no reference) to 3 (thorough discussion and redress actions identified)</i>								

the poverty impacts of the sector. Environmental issues and/or impacts were thoroughly discussed in 8 CASs, an increase from just 3 in 2003. Energy sector issues are more likely to be discussed in CASs in the context of private sector development with sector issues of regulation

⁴ When preparing the Strategy in 2000 an assessment was made of the most recent CAS for 44 countries. By June 2003, new CAS documents had been approved for 26 of these. The current assessment was therefore to compare, in the case of these 26 countries, how the most recent CAS compared to the CAS prepared prior to the Strategy. The assessment criteria were the pillars of the Energy Strategy and the four pillars of the Bank’s country business model that are expected to be reflected in the CAS (vision, diagnosis, programming and results).

and governance most frequently referenced. The macro-economic impacts of the sector (e.g. impacts arising from sector subsidies) are the most likely to be overlooked in CAS documents. Table 2.2. provides illustrations of the discussion of energy issues in the CAS.

Table 2.2

ENERGY PROGRAM Business Lines	Strengths and Weaknesses in treatment of energy in CAS documents.
Poverty reduction	A handful of CASs were assessed as good i.e. had a fairly comprehensive discussion of priority issues for poverty reduction: Albania (protecting consumers with low incomes against rises in electricity prices; Bangladesh (rural electrification & women's role and loss of livelihood due to environmental degradation; Chad (use of oil funds for social infrastructure); Peru (affordability and corruption issues with provision of services). The majority of CASs however demonstrated weaknesses in that there was little or no discussion of the following issues in countries where they are known to be priorities e.g. affordability of energy services for the poor (ii) role of energy in delivery of health and education services (iii) use of biomass fuels and of policies that encourage fuel switching to clean cooking fuels (LPG and other petroleum products); role of energy in improved productivity especially to raise rural incomes.
Governance and private sector development	All 26 CASs were found to discuss at least one aspect of energy sector reform, typically one or more of the following issues: legal and regulatory development, petroleum revenue management, mining revenue management, utility privatization, electricity and oil and gas market development. However in several countries (e.g. Mexico, Indonesia and Venezuela) where petroleum sector issues (including petroleum revenue management) are critical, the CAS discussion of these is perfunctory.
Macroeconomic & fiscal	The fiscal destabilizing effect of large sector subsidies are mentioned in the CASs for Bangladesh, India, Indonesia, Mexico, Poland, Philippines and Romania and the macro risks from dependence on oil exports in those for Yemen and Venezuela. However there was only perfunctory or no mention of energy subsidies or the cost of oil imports in other countries for which these are priority issues.
Environmental sustainability	Urban air pollution issues pertaining to the energy sector are discussed in the Argentina, China, Philippines, Indonesia & Mexico CASs, carbon reduction in Colombia, Poland and Romania CASs, reduction of tree cover from biomass use in Yemen CAS; and environmental management in the petroleum sector in the Chad and Colombia CASs. However, in the case of other countries where urban air pollution, unsustainable biomass use, and environmental management in the petroleum sector are priority issues, the CAS documents largely overlooked the issues.

Integrating Energy in Poverty Reduction Strategies

2.4 *PRSPs*. Key dimensions of energy poverty that are often underrepresented in PRSPs are: linkages with productivity that impact rural incomes; cross sector applications of energy services (e.g. energy in the provision of health and education services), the health impacts of biomass use; and inefficiencies in petroleum product markets that increase the cost of cooking

fuels (Table 2.3). A sample of six PRSPs from before August '02 and six from after August '02⁵ was made in order to assess if later PRSPs exhibit improved treatment of energy issues. Overall, PRSPs since August 2003 are more likely to contain a more comprehensive discussion of energy issues than those from before this date. For example the Sri Lanka and Tajikistan PRSPs contain discussion of macro, environment and regulatory issues in addition to those of access and affordability. With respect to identification of energy interventions and energy targets, 4 PRSPs since August '02 compared to one from before that date were assessed as good practice.

Table 2.3

Treatment of energy in PRSPs – Overview of 12 PRSPs	
<i>Access to energy services</i>	<p>Energy access and its linkage to productivity is often overlooked in PRSPs.</p> <p>Few of the sample of PRSPs, either before or after August 2002, identify the lack of electricity services in rural areas as a constraint to service delivery e.g. none identify the lack of reliable electricity in health centers as a constraint for better health services. Access to petroleum fuels (LPG and kerosene) for cooking is often overlooked in countries where the health and opportunity costs of biomass use and collection are considerable (e.g. Uganda, Cambodia).</p>
<i>Macro-fiscal, growth & environment linkages</i>	<p>5 PRSPs since August '02, compared to two from before, had good discussion of energy's role in growth (e.g. Uganda PRSP progress reports and the Ethiopia PRSP identifies unreliable power supply as a business constraint).</p> <p>3 PRSPs (Ghana, Sri Lanka and Tajikistan) since August '02 compared to one from before (Azerbaijan) were rated "good" for the discussion of energy's links to macro/fiscal issues. The Sri Lanka PRSP, for example, identifies the quasi fiscal deficit that is the result of energy sector subsidies.</p> <p>The Tajikistan PRSP identifies alternatives to wood as a means of ensuring environmental benefits, including preservation of forests and soil conservation outcomes largely unidentified in earlier PRSPs.</p>
<i>Energy indicators</i>	<p>In addition to their "core" MDG-type indicators, PRSPs sometimes contain "non-core" indicators and targets that acknowledge priority programs. 4 PRSPs (Cambodia, Ghana, Ethiopia and Sri Lanka) since August '02 compared to one (Azerbaijan) before had explicit energy indicators. The Sri Lanka PRSP has unusually detailed baseline indicators of access by income quintile and region to "safe cooking fuel" and electricity. Generally there is an overemphasis in PRSPs on various formulations of the indicator <i>electricity access by households</i> to the exclusion of almost all other potential energy indicators e.g. indicators related to affordability of electricity and indicators of household access to clean cooking fuels.</p>
<i>Energy program costings in PRSPs</i>	<p>PRSPs since August '02 are more likely to make reference to energy sector expenditures but in so doing acknowledge that insufficient sector information is available on the cost of some energy programs (e.g. the Uganda PRSP notes the necessity to cost energy subsidies). The Ethiopia, Ghana, and Tajikistan PRSPs presented energy program costs.</p>

⁵ PRSPs were selected to ensure representation of all the regions. Azerbaijan, Burkina Faso, Honduras, Mozambique, Niger & Uganda PRSPs were prepared prior to August '02 and the Cambodia, Ghana, Ethiopia, Nicaragua, Sri Lanka and Tajikistan PRSPs were prepared after August '02.

Challenges

2.5 **Staff resources.** Staff report constraints in terms of time, skills, budget and resources in engaging with CAS and PRSP processes even as they report instances of good practice in terms of management attention and substantive energy staff contribution in the case of several countries. The latter successes need to be built on. Engagement in the CAS & PRSP demands that sector staff collaborate with colleagues and country counterparts across a range of disciplines and that country management is alert to the need to draw on specialist sector expertise in addressing sector issues. In response to concerns about extractive industries in “resource-rich” countries with weak governance, Bank management will ensure that the issues in this respect are fully addressed in the CAS.

2.6 **Relevant and timely ESW.** The Energy Program promoted greater advocacy and progress has been substantial. The series of regional workshops in Africa sponsored by ESMAP in FY02/03 to build awareness among non-energy policy makers is a case in point. The body of documented good practice and available ESW (e.g. in India with respect to rural access to electricity) has expanded greatly. Still, key dimensions of energy poverty that are often underrepresented in PRSPs & CASs (e.g. energy’s role in productivity and rural incomes, the health impacts of biomass use and inefficiencies in petroleum product markets) highlight the need for ESW on these issues that will feed into the CAS and PRSP processes in a timely manner. Poverty and social impact analysis (PSIA) tools that analyze the distributional impacts of energy sector policy changes (e.g. subsidies and price adjustments following privatization) are now more widely deployed (e.g. current ESW of this nature is ongoing in Georgia, Ghana, Lesotho, Tajikistan & Yemen). In this regard it should be noted that there is scope for improvement of energy questions in multi-topic household surveys (LSMS). These surveys which combine characteristics of household energy use and socio-economic variables have great potential to inform policy choices as well as providing sector performance benchmarking and targets.

2.7 **Better results framework.** For low-income countries, the MDGs have taken center stage. The MDG goals of health, education, nutrition, income distribution and environmental sustainability are often the point of departure when defining development strategies in these countries. Sector interventions (investments and policy changes) need to articulate in their results framework how better sector performance will contribute to achievement of the overarching country goals. With the advent of results-orientated CASs (for IDA and IBRD countries alike), it is important that practical results measurement systems are mainstreamed in country energy strategies. The recent Cameroon CAS is a good practice in this respect. Restoring power reliability is identified as the critical energy policy contributing to the CAS goal of improved competitiveness. *Production time lost due to power outage* is the outcome indicator chosen for which an Investment Climate Assessment will provide data.

Box 2.1 Energy in the Uganda PRSP/PEAP
A case of critical energy issues for poverty reduction ignored

Since the 2000 Uganda PRSP (based on its Poverty Eradication Action Plan of 1997), three annual status reports have been produced. For these, three assessment reports produced by Bank and IMF staff are available. These were examined in relation to the 10-year Electrification Strategy of 2001 and a new Energy Policy in 2002.

Positive features of the PRSP and subsequent status reports are: the role of electricity access in promoting income earning activities in rural areas; identification of poor electricity supply reliability as a business constraint; details of energy expenditures in the MTEF; (iii) identification of the need to estimate the cost of subsidies for rural electrification and to integrate these in the budget; and inclusion of household electrification rate as one of the PRSP targets.

However the PRSP and its annual status reports are largely silent on critical issues of biomass use and the petroleum sector that are discussed at length in Uganda's Energy Policy of 2002. Biomass provides almost all the energy for cooking and water heating in most households, institutions and commercial buildings and is the main source of energy for rural industry. Its poverty impacts are through indoor air pollution that contributes to the high rate (23%) of infants with ARI. Unsustainable harvesting of biomass causes land degradation and its opportunity cost is high since it involves women and children in long hours of biomass collection and tending fires. Critical policies to effect fuel switching from biomass to use of LPG and kerosene are ones to diversify supply, build strategic stocks, and promote competition among fuel suppliers that would reduce petroleum prices. At 8% of total national imports, the petroleum import bill is significant.

A discussion of these issues would be appropriate in the PRSP.

2.8 *Country assistance evaluations.* OED Country Assistance Evaluations (CAE) can be a valuable input to the design of future Bank engagement - the China CAE is a good example. CEAs need to be timely to ensure their relevance.

3. DEPLOYMENT OF WBG INSTRUMENTS

“Provide advisory activities & technical assistance; deploy & combine instruments for maximum impact; expand adjustment & programmatic lending and cross sectoral operations..” Energy Program May 2001

3.1 The implementation of the Program anticipated the application of the full range of WBG instruments to help achieve its goals. It pointed out that financing and advice should be mutually reinforcing for achieving development objectives and that there should be a dynamic relationship between sector reform and lending with no rigid timetable linking one with the other.

3.2 During the past two years, there has been marked progress in combining and sequencing different instruments, and in expanding the use of instruments in response to the changed environment of sharply reduced private flows. These include:

- Joint IDA/IFC financing for investment in new capacity
- Corporate lending by IFC for refinancing and acquisition financing to mitigate disruptions caused by the exit of key investors
- Local currency financing
- Greater use of partial risk guarantees to mobilize scarce commercial finance\
- Use of carbon credits as part of financing packages

Analytic and Advisory Activities (AAA)

3.3 Recovery in the volume of AAA.

The volume of AAA (economic & sector work, workshops, and other advisory work) in the sector has steadily increased since FY00 (Fig. 1). In all regions there has been increasing emphasis on non-lending instruments (policy dialogue and knowledge sharing, carefully targeted AAA work, hotline support) in countries not yet demonstrating commitment to the “hard” elements of reform, combined with a refining of collaboration with PREM colleagues to hone energy sector triggers and conditionalities in structural adjustment and other multi-sectoral lending. This has been the approach pursued, for example in the power sector in Mexico and India and in both the power and gas sectors in Indonesia, Romania, Nigeria and Vietnam. The scope of AAA has increased both in terms of cross country work (e.g. regulation, public/private partnerships, evaluation of electrification, indoor air pollution, political economy of reform, oil revenue management) and country level diagnostic work and strategy (c.f. Table 3.1).

Figure 3.1 Energy AAA

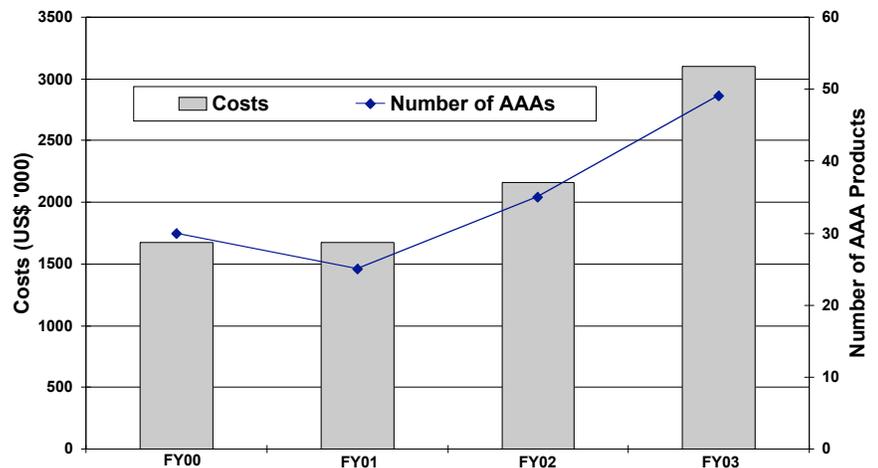


Table 3.1 AAA alignment with the Energy Program

Illustrative examples of ESW undertaken in FY02-FY03	
<i>Poverty reduction</i>	<p>Measuring the socioeconomic (incl. poverty alleviation, gender, equity & education) impacts of rural energy access (global)</p> <p>Methodology development to monitor and evaluate rural electrification projects (global)</p> <p>Measurement of distributional impact of prices changes following energy sector reforms (e.g. Kyrgystan)</p> <p>Analysis of health effects of indoor air pollution from biomass energy use (India)</p> <p>Analysis of policy changes to effect fuel switching from biomass to clean fuels (Pakistan)</p> <p>Study of affordability of electricity tariffs (Middle East)</p> <p>Start up of work to develop guidelines, toolkits and approaches for scale-up of WBG support for rural and renewable energy</p>
<i>Governance and Private Sector Development</i>	<p>Regulation by contract for electricity distribution privatization (global)</p> <p>Country framework reports for private infrastructure (PPIAF) - policy and regulatory framework, and the barriers and opportunities for private participation (multi-country)</p> <p>Survey of power sector investors (global)</p> <p>Lessons learned in operations of transmission system operators (global)</p> <p>Analysis of political economy of power sector reform (e.g. India, Georgia)</p> <p>Coal sector regulation and pollution abatement (e.g. China)</p> <p>Lessons learned from private participation in the power sector (ECA countries, India)</p> <p>Regional study to assess alternative models for public incentives and energy service delivery (e.g. concession/license schemes for off-grid energy service delivery)</p>
<i>Macroeconomic & fiscal</i>	<p>Oil revenue management, and governance in oil producing countries (global, Timor Leste, Chad, ECA countries). Capacity building in governance and revenue management for the natural resource industries.</p> <p>For example to help build capacity on a sustainable basis the Bank, in partnership with Norwegian and New Zealand donors, has embarked on a cooperative program with educational institutions in some Asian and African countries to prepare and deliver university level training courses.</p>
<i>Environmental sustainability</i>	<p>Economic analysis in renewable energy projects (China, Croatia, South Africa)</p> <p>Study of regulatory mechanisms of fees and credits to reduce SO₂ emissions in coal use (China)</p> <p>Analysis of linkages between renewable energy and productive uses (global)</p> <p>Air pollution and mitigating its health impact (Bangladesh, India, LAC Clean Air)</p> <p>Market mechanisms for financing emissions reductions (global)</p>

3.4 *Progress in Streamlining Energy Trust Funded Programs (ETFPs)* Beginning in May 2001 the Consultative Group of donors for global energy TFs signaled the start of a process by which the donors and the World Bank's management would consider the energy TF programs in a more holistic and coherent way. The terms of reference of the Technical Advisory Group to

ESMAP were extended to the other energy TF programs. Since, May 2001, the TAG conducted a mapping exercise of the mandates and practices of the TF programs and undertook a process of dialogue with Bank management, donors and clients. The TAG in its various reports since May 2001 has noted the considerable progress in coordinating the strategic management of the energy TFs and has noted greatly improved processes and transparency by which resources are allocated. The process of streamlining the energy TF programs is ongoing with the Consultative Group of donors and Bank management considering various options for better coordination.

3.5 *Non-Energy AAA.* Bank energy staff have been actively engaged in non-energy ESW such as public expenditure reviews (PERs), poverty assessments (PAs) and development policy reviews (DPRs) introduced in FY02. The Pakistan DPR for example takes note of sector subsidies' impact on macroeconomic stability and how high energy prices paid by industry weaken the investment climate.

Challenges

3.6 *Energy Trust Funds.* Under investment, in the past, in country level diagnostic work has also been identified as a weakness in Bank activity that contributed to reduced energy lending. To increase the impact and use of AAA, energy TF programs and regional and anchor managed ESW will need to be better coordinated. The energy TF (Table 3.2) programs employ expert panels to carry out annual or semi-annual assessments that employ (although not consistently) the evaluation criteria (strategic relevance and timeliness, internal quality, clarity of presentation, and likely impact) of QAG & OED. However dissimilar reporting formats and inconsistent evaluation methodologies make it difficult to synthesize the separate assessments⁶. It may also be noted in this context that a recent review⁷ found that assessment conducted on a task-by-task approach does not capture important lessons at the sector and country level. Since FY02, QAG in its annual assessment of ESW, has explored relationships of specific ESW with other elements in the portfolio, notably other AAA and lending. This approach is one that may also be systematically adopted by the energy TFs in their assessment of individual activities.

Table 3.2

Program	Areas of focus
Africa Rural and Renewable Energy Initiative (AFRREI)	Energy for sustainable development in Africa
Asia Alternative Energy Group (formerly ASTAE)	Alternative energy (renewable energy and energy efficiency)
Carbon Finance Business including Prototype Carbon Fund (PCF)	Promoting the market for project based greenhouse gas emission reductions
Energy Sector Management Assistance Program (ESMAP)	Energy access; Energy and environment; and Energy market development
Global Environment Facility (GEF)	Energy conservation and energy efficiency, renewable energy

⁶ Sample size (e.g. just one energy ESW task was included in the sample in the FY02 QAG assessment⁶) is another limitation in drawing conclusions at the sector level from the QAG annual reviews of ESW.

⁷ Report of the Advisory Panel on Assessing Economic and Sector Work May 7, 2002

Global Village Energy Partnership (GVEP)	Scaling up energy access
Prototype Carbon Fund (PCF)	Promoting the market for project based greenhouse gas emission reductions
Public-Private Infrastructure Advisory Facility (PPIAF)	Improve the quality of infrastructure through private sector involvement
Solar Development Corporation (SDC)	Business development support to companies that provide photovoltaic (PV) and other energy services
Regional Program on the Traditional Energy Sector (RPTES)	Sustainable use of modern biomass

3.7 *Sector diagnostic tools.* The IAP promotes the use of standardized infrastructure assessment tools. Methodologies to support these tools - such as for carrying out regulatory assessments and results monitoring - will need to be completed and then mainstreamed. Existing tools such as those used in Poverty Assessment that can diagnose the distributional impacts of policies in the energy sector, need to be more widely deployed as part of Bank investment projects.

3.8 *Evaluation of AAA.* Reporting on implementation of the Energy Program in future years will require improved monitoring of the impact of non-lending instruments. To increase the impact and use of AAA, energy related TF programs and regional and anchor managed AAA will need to be better coordinated. For example, more harmonized reporting formats and assessment methodologies would contribute to better coordination and provide TF program managers with a comprehensive overview of country & regional AAA programs. In assessing activities, TFs could apply more consistently the OED/QAG M&E criteria of strategic relevance, timeliness, internal quality, clarity of presentation, and likely impact when evaluating task impact and rate performance using the four point rating scale used by QAG & OED. Improved coordination is likely to receive further spur with the move from a task-by-task framework of evaluation to a country framework beginning in FY04 in the annual QAG assessment of ESW.

WBG Financing and Guarantee Instruments

3.9 *IBRD/IDA.* Despite a modest increase in the *number* of Bank/IDA energy investment operations in the period FY00-03 compared to the prior 3 year period, investment *amounts* remain below those during most of the 1990s. Annex 2 provides a breakdown of IBRD and IDA lending for energy projects and for energy components in the investment projects of other sectors. The relative decline in IDA lending has been less than that for IBRD financed operations. The pipeline of IBRD/IDA energy projects indicates that currently 22 investment operations for \$1.4 billion are being developed for Board approval in FY04 and 19 operations for \$1.7 billion in FY05. IBRD/IDA financing is usually supported with co-financing (from government, bilateral donors and the private sector) .

3.10 *IBRD/IDA project processing.* The Bank-wide drive led by OPCS begun in '02 to streamline and speed up Bank procedures and processes has already shown positive results e.g. the agreement by OPCS and ESSD to reintegrate fiduciary, environment, and social staff into project teams. Although the average processing time for IBRD/IDA operations over the past 10 years has been long, with about a third of projects taking more than 2 years to prepare, a

number of energy projects have been prepared recently on an accelerated timetable (e.g. a power project in Romania whose design was rated highly satisfactory).

3.11 **IFC.** 22 power sector investments for a total of \$1.9 billion gross investment were approved from FY01 to FY03. In the petroleum sector 15 operations for a total of \$666m gross IFC investment were approved from FY01 to FY03. (Annex 2). There have been important changes in the business activities of IFC, dictated by the rapid decline in co-financing from commercial sources and international capital markets since 2000. With limited financing opportunities for 'greenfield' power plants, IFC has focused more on corporate transactions particularly in the areas of refinancing, restructuring and acquisition-finance. The main objective has been to maintain the presence of traditional private investors in ongoing businesses while identifying new regional and local sponsors. The focus of new activities is likely to be driven by countries with stronger track records in sector reform and macro-economic stability. IFC is likely to focus on more stable countries and on countries where sector reforms have a credible track record. The investment in Transelec in Chile illustrates this (Box 3.1). In particular situations

Box 3.1 HQI Transelec, Transmission in Chile

Transelec is the main owner and operator of the principal electricity transmission network in Chile formed in October 2000 following the acquisition by Hydro-Québec of Endesa Chile's transmission assets. IFC's Board approved an IFC investment of up to US\$60 million to acquire up to 13% of Transelec in the form of convertible preferred shares. Transelec has an aggressive capital investment and expansion plan over the next several years, whilst Hydro-Quebec is approaching its equity exposure limit for Chile and Transelec is already at its target level of financial leverage. Proceeds from IFC's investment will fund capital expenditures. At a time of regulatory changes in Chile and economic volatility in Latin America, IFC's investment in Transelec will signal continued support of governmental reforms.

Box 3.2 Tajikistan - Pamir Private Power Project

The project is a US\$26m investment program to restore a functioning electricity service in the Pamir region of Tajikistan. The project company (Tajikistan Pamir Energy Corporation) will: take-over and operate all existing electricity generation, transmission and distribution facilities under a 25-year concession agreement; expand a partially completed hydro-power Plant from 14MW to 28MW and construct a river regulating structure to ensure adequate flow in winter; and rehabilitate other assets including substations, transmission and distribution lines.

where the provision of electricity needs to be subsidized, IFC will collaborate with IBRD/IDA to leverage concessional funding. The Pamir project is an example of this (Box 3.2). Gross IFC investment has been fairly level in the power sector during the period with 7 or 8 investment operations approved each year since FY01 averaging about \$650m per annum.

3.12 **IBRD/IDA Partial Risk Guarantees (PRG).** As the external investment climate has become more constrained, there has been a significant increase in interest in the use of the IDA partial risk guarantee instrument since the first application for the Azito Power project in June 1999. The IDA PRG has been applied in mobilizing private sector financing for the \$180 million Haripur Power Project in Bangladesh. It has also been used in Vietnam for the development of Phu My 2 Phase 2 Power project where a \$75 million IDA PRG was able to mobilize commercial financing on attractive terms for this \$480 million project. Further operations involving partial risk guarantees are under active preparation. These include the Sasol gas pipeline project in Mozambique with IFC and MIGA, the West Africa gas pipeline project, and a West Africa Capital Markets Development project to help catalyze private investment in infrastructure.

3.13 **MIGA investment guarantees.** MIGA has expanded its guarantee operations in energy since 2000 (c.f. Annex 2). From some 18 energy operations in FY98 & FY99, MIGA issued guarantees to 29 power or oil and gas projects in FY02 and FY03. It also guaranteed \$90 million of the Phu My 2 project's commercial debt and swap breakage, and provide an additional \$48 million in guarantees to cover equity in the project. However, new MIGA guarantee operations have also been constrained by the fall-off in investor interest in the sector.

3.14 **GEF.** 16 projects whose total value was \$728 million were approved in FY02 & FY03 compared to 11 project in FY00 & FY01 whose total value was \$1,582 million (c.f. Annex 2).

3.15 **Carbon Finance.** The Carbon Finance Business purchases, on behalf of OECD countries, greenhouse gas emission reductions (ERs) generated by climate-friendly projects in developing and transition countries. Revenues from ER sales help the viability of these projects, and complement the Bank's other efforts in renewable energy and energy efficiency. The Carbon Finance business has grown from \$135m at the first capitalization of the Prototype Carbon Fund in 2000, to total funding commitments of over \$400m currently in several trust funds: PCF, Netherlands CDM Facility, Community Development Carbon Fund (CDCF), BioCarbon Fund (BioCF), and the voluntary World Bank Staff Climate Change Program. Energy projects comprise over 90% of the current pipeline of \$274m in ER purchases. Renewable energy and energy efficiency projects comprise 85% of ER purchases contracted to date. The pipeline includes small-scale projects aimed at supporting the rural poor (CDCF) and biofuels (BioCF). To date, the Latin America has represented the largest deal flow, but East Europe and East Asia deal flow has increased substantially in the past year, and a major effort is underway to increase the pipeline for Africa. Two of the ER purchase contracts signed to date have been linked to World Bank investment projects: Latvia Liepaja Solid Waste Management and Uganda West Nile Hydro component of the Energy for Rural Transformation project.

3.16 **Combining WBG instruments.** The Energy Program encouraged the application of WBG instruments in combination. The *Azito* power project in Cote d'Ivoire was an early example in 1999 of combining different instruments - an IDA PRG and an IFC B loan- to mobilize the first major private syndication of a power project in Africa. A number of recent examples illustrate the use of different instruments and innovative operations.

- *Tajikistan Pamir Private Power Project* combined IFC debt and equity finance with an IDA Credit. (Box 3.2)
- *Southern Africa Regional Gas Project* (Mozambique) involves two IBRD partial risk guarantees, IFC investment and a MIGA guarantee. In addition, a complementary project *Energy Reform and Access* project financed by IDA has been prepared in parallel and will provide technical assistance for the development of the gas sector.
- *Southern African Power Market Project* (Congo & Zambia in the 1st phase and Malawi and Mozambique in the 2nd) makes use of a multi-country program (horizontal APL) instrument.
- *Mali, Household Energy and Universal Access* project combines a GEF grant and IDA credit.

Challenges

3.17 **Infrastructure Action Plan.** The Infrastructure Action Plan (IAP) gives impetus to the adjustments necessary in the WBG in order to maximize funding for infrastructure from all sources including the WBG by pinpointing a variety of new instruments, business lines and

mechanisms to increase the use of combinations of loans, investments and guarantees from across the WBG. Challenges that the IEAP addresses include the following below.

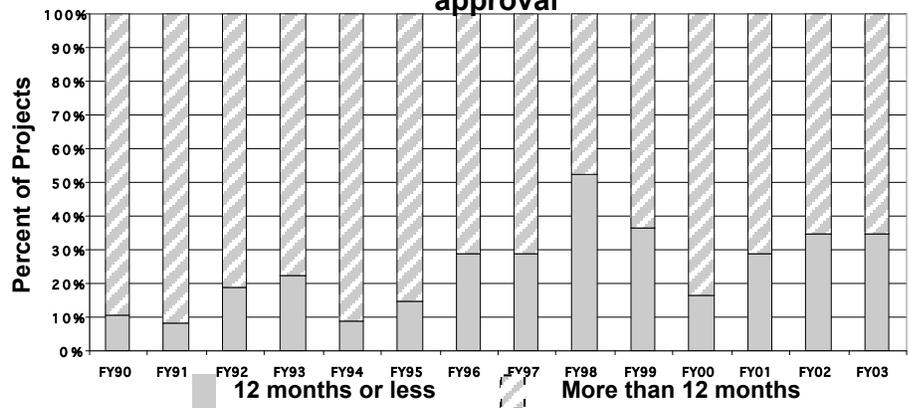
3.18 Reducing transaction costs. Delivering the enhanced program envisaged by the Energy Program and the IAP will require staff to reduce transaction times and costs for the client. These are important disincentives for countries to borrow from the Bank especially in the case of middle-income countries with alternative sources of financing. Even in the case of low-income countries with little alternatives sources of finance, transaction costs for small energy-only projects are burdensome for countries with limited capacity. Processing times for two thirds of energy operations over the past 10 years exceeded 12 months, with more than one third of projects taking more than two years to prepare (Fig. 3.2). Lengthy preparation time is also likely to adversely affect project quality. In its 3rd *Quality at Entry Review*, QAG found that for all projects it reviewed, those requiring more than 24 months preparation time received a lower rating than those prepared in shorter time.

3.19 Clarifying Private and Public Sector Roles. Lack of clarity on the roles of the private and public sector in infrastructure service delivery, identified

as one factor in the decline in Bank energy lending, is an issue that the Guidance Note on Public and Private Sector Roles in Electricity addresses. The Note identifies expanded opportunity for WBG support to the public sector in reform oriented countries. It provides guidance to WBG staff on assessing the suitability of available options for public-private roles in the financing and provision of electricity, and the main steps which staff should take to analyze these options. The Note links the different public-private models with appropriate WBG instruments, including project-specific, sector-wide and broader interventions. Given the variations in context across Bank client countries, prescriptive one-size-fits-all recommendations are not appropriate and a challenge will be to operationalize the guidance in different country contexts.

3.20 Simplifying procedures for IBRD/IDA lending. The IAP action plan pinpoints the challenges that management will continue to deal with in delivering the expanded program envisaged by the Energy Program and IAP; addressing institutional policy constraints, developing operational tools to support infrastructure finance, simplifying Bank procedures and standardizing the interpretation and application of safeguards. Particular challenges in the energy sector will involve designing operations to support energy access, integrating energy in multi-sector programmatic loans in IDA countries, harmonizing investment project review procedures and further streamlining the design of investment and adjustment loans in medium income countries.

Fig 3.2 Time lag: Project concept document to Board approval



3.21 *IFC.* In the power sector, a challenge for IFC is to maintain the presence of traditional private investors in ongoing businesses while identifying new regional and local sponsors. IFC is likely to focus on more stable countries where sector reforms have a credible track record.

3.22 *ESW and other AAA.* The recovery in the level of AAA since 2000 will need to be sustained. Under investment, in the past, in country level diagnostic work has also been identified as a weakness in Bank activity that contributed to reduced energy lending.

3.23 *Sector diagnostic tools.* The IAP promotes the use of standardized infrastructure assessment tools. Methodologies to support these tools - such as for carrying out regulatory assessments and results monitoring - will need to be completed and then mainstreamed. Existing tools such as those used in Poverty Assessment that can diagnose the distributional impacts of policies in the energy sector, need to be more widely deployed as part of Bank investment projects.

3.24 *Partnerships.* Partnerships with donors, foundations and the private sector will continue to be important for Program implementation (Table 3.3) .

Table 3.3 Partnerships

PARTNERSHIPS	Focus of Activities
CASM (Community and Small Scale Mining)	CASM is a partnership between IBRD/IDA and other stakeholders such as DFID of the UK, UN, ICMM, Conservation International and others, and has become an integral part of the Bank strategy for addressing the challenges of Artisanal Scale Mining (ASM) (http://www.casmsite.org). To this end, the CASM Secretariat, housed at IBRD/IDA has organized a knowledge-based community of miners, communities, government officials, development agencies and non-profit organizations involved in the mining sector.
Global Gas Flaring Reduction Initiative.	The Global Gas Flaring Reduction Initiative was launched at the 7 th Conference of Parties in November 2001 received renewed impetus at the WSSD in Johannesburg. The purpose of this public-private partnership initiative is to help create incentives to develop and finance sound investments in gas flaring reduction. Three 'demonstration' projects in Russia, Asia, and the West Africa gas pipeline are being studied for their potential eligibility. The Partnership will work with around ten countries over a three-year period, focusing on six or seven countries in the first two years.
Global Village Energy Partnership (GVEP).	Launched in Johannesburg during the WSSD in September '02 it is a mechanism promoted by the Bank that seeks to join with partners to meet the challenge of scaling up energy access. GVEP aims provide a central clearinghouse for information and engage knowledge dissemination efforts. Best practices and lessons learned from projects, information on construction, financing, and new technologies will be developed by promoting a network of practitioners; professionals, entrepreneurs, governments, non-government organizations and consumers.
IFC-Netherlands Carbon Facility.	This is an arrangement under which IFC will purchase greenhouse gas emission reductions for the benefit of the Government of the Netherlands using the CDM.
Renewable Energy & Energy Efficiency Partnership (REEP)	Launched in Johannesburg during the WSSD in September '02 to help in removing the existing barriers, both financial and non - financial in order to expand the market for modern renewables and energy efficiency,
Solar Development Group (SDG)	SDG is a Bank Group partnership with several bilateral donors, US and European charitable foundations and private sector investors, aimed at private PV and PV-related business in developing countries. SDG consists of two entities: Solar Development Foundation, a not-for-profit organization offering business development and seed financing; and Solar Development Capital, a US\$ 29 million for-profit private equity fund providing growth capital.
World Bank Carbon Finance Business incl. Prototype Carbon Fund (PCF)	This business manages a family of trust funds totaling about \$400m in commitments, that purchase greenhouse gas emission reductions on behalf of public and private participants: the PCF, the Netherlands CDM Facility, the Community Development Carbon Fund (CDCF), the BioCarbon Fund and the Staff Climate Program, with additional funds under development. The PCF is completing its investment phase this year but the other facilities are still developing their pipelines. Energy sector projects, including small-scale renewables, energy efficiency, fuel switching account for more than 85% of the Carbon Finance Business's portfolio and pipeline.

4. STAFFING & SKILLS MIX

“Take actions to improve skills mix through recruitment, training, coaching, joint teams and incentives..” Energy Program, May 2001.

4.1 At the time of Program preparation, a staff and skills review was carried out that indicated:

- Under-representation of Part II and scope for better gender balance, especially among senior sector staff (management & technical).
- A skills deficit among staff capable of integrating energy programs with those of other sectors in the key interface areas of poverty reduction, governance, environment and fiscal management.
- From FY99 through FY03 the number of staff mapped to the energy sector in the Bank declined by approximately 20%. Approximately 22% of senior sector staff in the Bank in FY01 are due to retire from the Bank by FY08.
- Insufficient pace of rotation across the organizational units of the Bank as well as between regional units.

4.2 **HR Strategy.** In response to the staff and skills review, there has been a concerted effort by management and the Sector Board to address skills mix and skills deficit issues through batch recruitment, managed rotations, and by developing a longer term HR strategy to address the projected retirement of senior sector staff. The recruitment effort has focused on engagement of staff seasoned in energy development issues and capable of integrating a broad agenda of energy sector issues that are at the interface of poverty reduction, governance, macroeconomic and fiscal management and the environment

4.3 **Collective decision-making.** The Sector Board now reviews and approves all job descriptions & promotions for positions at Level F through Level H. It ensures consistent technical standards across the institution and reviews the Development Action Plans of high-potential staff to ensure that they are provided the appropriate training, assignments and opportunities to develop.

4.4 **Batch Recruitment.** A batch recruitment exercise was launched in March '02 that sought candidates with expertise in energy economics, rural energy, regulation and climate change. High potential Part II and female candidates (Box 4.1) were actively sought. Six new staff were recruited in the first phase of the exercise. The recruitment drive is ongoing and other appointments took place subsequently from the roster of candidates created in the exercise.

4.5 **Managed Rotations & Position Conversions.** The Sector Board facilitated movement of professional staff within departments and regions. There were 16

Box 4.1 Mobilizing Diversity in the Energy and Mining family of the World Bank Group

A report¹ in 2002 on diversity cited the Energy and Mining Sector Board as a best practice in mobilizing diversity. The report states (page 19).

“Batch recruitment outcomes indicate that results are achieved when diversity is considered early in the planning process and remains a priority throughout the search and selection processes.”

1. Towards Mobilizing Diversity in the World Bank Group, Director Diversity Programs Office, Human Resources Vice Presidency, December 9, 2002.

managed rotations and 12 staff conversions in FY02 and FY03.

4.6 *Training and Lecture Series.* The Energy Forums in June 2002 and February 2003 attracted more than 1,000 participants. They were designed to inform WBG staff and partners of the WBG's energy program, the importance of energy to the Bank's core mission of poverty reduction; and to provide an opportunity for Bank partners, clients, and energy professionals worldwide to network and discuss innovative approaches to energy development and investment. Core training programs were also launched in the areas of energy markets, energy and poverty, and biomass. Energy training modules were included in the training courses of other sectors (e.g. Poverty and Social Impact Analysis of PREM). More than 360 WBG staff participated in these training events. A Lecture Series was launched with leading practitioners and the lectures are available through the Development Gateway.

4.7 *Thematic Groups.* Two thematic groups (Energy Markets and Energy & Poverty) are active in cross-sectoral networking. Their activities focus on internal dissemination of emerging practice through workshops and seminars and during the annual Energy Week program of activities.

Challenges

4.8 Sector management is faced with reconciling recruitment needs for delivery of the scaled-up program envisaged by the Program and the IAP over the long term with financing and staff work programs that are anchored in the short term. The Sector Board will continue to manage strategic staffing plans aggressively and to make direct staff incentives available.

4.9 Technical skills in the energy practice will need to be renewed and new skills brought into the practice as senior staff retire. The Sector Board is currently reviewing HR plans that would free up space in the G/H technical stream.

4.10 Progress made in improving the design and content of formal energy training needs to be sustained and enhanced through closer collaboration with WBI.

5. KNOWLEDGE MANAGEMENT

“Strengthen knowledge management. Promote external partnerships to access knowledge and build capacity..”. Energy Program, May 2001.

5.1 The Program called for an increased emphasis on knowledge management to:

- expanding work with partners and clients to gain access to valuable knowledge, for capacity building and to enhance credibility;
- enhancing the WBG knowledge platform of workshops, conferences, publications and e-dissemination to provide a clearinghouse for sector information and knowledge.

5.2 *Dissemination of the WBG Energy Program.* The Program document itself has been widely disseminated and communicated internally and outside of the Bank. The Energy Program articulated the sector’s essential function in growth and poverty reduction and to define the Bank’s comparative advantages in the sector and was prepared in part in response to internal and external debate that challenged the sector’s role. An emphasis therefore of knowledge management in the first two years of the Energy Program was on internal and external advocacy. A measure of the success of such efforts are statements in the Report of the World Summit on Sustainable Development⁸ and of the World Bank Development Committee⁹ of the central role of energy in achieving the MDGs. Dissemination of emerging sector practice and analytical findings through publications, conferences and international fora benefited from the impetus of the Program.

5.3 *Knowledge exchange / partnerships.* Examples of activities include the following. A publications series, the Energy and Mining Sector Board Discussion Papers, was launched in 2002 and papers in the series have been in high demand. Since the Program was prepared, more than 60 energy reports have been published in formal publications series of the World Bank (Annex 3). There have been several instances of successful collaboration with partners in specific KM-oriented activities. Examples are with the International Energy Agency to prepare a global energy investment outlook and with the World Energy Council and Council of European Energy Regulators and others in the World Forum on Energy Regulation. Rapid Response, with support of energy staff, provides both free and fee-based access to the Bank’s knowledge resources and expert advice across the range of infrastructure issues. Global Partnership on Output-Based Aid is a global trust fund to demonstrate and document OBA methods of supporting the sustainable delivery of basic services to those least able to afford them and to those currently without access.

⁸ Report of the World Summit on Sustainable Development Johannesburg, 26 August-4 September 2002

⁹ Supporting Sound Policies with Adequate and Appropriate Financing: Implementing the Monterrey Consensus at the Country Level, Development Committee, SecM2003-0370 August 14,2003

5.4 **Energy Trust Fund Programs.** TF programs (e.g. ESMAP & PPIAF) managed by the WB, have played an important role, in their specialized areas of focus. Knowledge management activities such as client capacity building and knowledge exchange is central to the mission of these programs.

5.5 **Thematic Groups (TGs).** The Energy Markets and Energy and Poverty thematic groups play an important role in knowledge management, information dissemination, and professional development. The TGs encourage networking with other sector Private Sector Development, Human Development, Urban Development, Environment, Poverty Reduction and Economic Management, and Development Economics. Key activities include: hosting learning events at the global and regional level (in partnership with ESMAP, World Bank Institute, and other internal units) with the objective of sharing experiences and encouraging good practice. The annual work plans of TGs are discussed and approved by the Sector Board.

Box 5.1 Knowledge Activities in the Prototype Carbon Fund – PCF plus.

The generation and dissemination of knowledge has been one of the key objectives of the PCF. This objective has been pursued through the operation of the Fund itself, through PCFplus research and training activities, and through PCF fellowships. In 2000, PCFplus was established to meet capacity building objectives in carbon finance. PCFplus supports the training of specialists in the WBI as well as researchers in DEC. A summary of the training activities to date undertaken as part of this program is as follows:

- 1600 carbon finance training days staff by WBI for Bank/IFC staff and clients;
- Fellowships in carbon finance for host country/ NGOs;
- Shareholder funded participant Fellowships;
- Training/Briefings for Corporate/Government shareholders;
- Training sessions for host country negotiators.
- Research Reports on 12 different topics such as methodologies and carbon market

Challenges

5.6 **KM Strategy development.** An OED institution-wide review of knowledge management found in the Bank found that it does not adequately link knowledge sharing programs to lending and non-lending processes. It also found that it is deficient in quality control, time-bound goals and related performance indicators and audience focus. The OED evaluation called for effort to institutionalize knowledge management by applying its tools directly to the Bank's core business processes and to integrate it in country programs through the CAS. A review will be carried out in INF VP of Quality Enhancement, Knowledge and Learning Services activities in INF in FY04 that together with a separate assessment of INFVP Global Programs will provide recommendations to management.

5.7 **Information Clearinghouse.** The energy practice has focused primarily on making available Bank produced information and has not attempted a clearinghouse function for internal and external knowledge. Exceptions are Rapid Response, which has undertaken an extensive effort to bring in knowledge from outside sources. GVEP has also will also endeavor to make a clearinghouse function part of its KM activities.

6. MEASURING FOR RESULTS: MONITORING AND EVALUATION

“Better manage development effectiveness risks and strengthen monitoring and reporting to measure progress towards program outcomes..” Energy Program May 2001

Improving Development Effectiveness

6.1 *Impacts of completed projects.* Development effectiveness of IBRD/IDA energy projects measured by the criteria of satisfactory outcome, likely sustainability and institutional development impact in OED annual evaluations has improved through '03 and is on par with the average for all Bank lending. The latest annual Review of Development Effectiveness that assesses closed projects found that these had improved over the period of review (Table 6.1).

Table 6.1 Ratings of Development Effectiveness (% projects)¹⁰

Energy Projects	Outcome satisfactory	Sustainability likely	ID** Impact substantial or better
FY 97-99	64	53	40
FY 00-02	69	68	48
FY 01-03*	82	86	57
All Bank projects FY 00-02	77	73	49

*Source OED <http://oednts2.worldbank.org/ratings/index.html>

** Institutional Development

6.2 *Active projects.* Ratings have steadily improved with the percent of projects at risk having fallen from 19% to 13% (corresponding to a fall in US\$ commitments from 21% to 16%) between FY00 and FY03 following an aggressive program to close or restructure problem projects and ensure that projects entering the portfolio are of better quality.

6.3 *New projects.* 81% of energy projects entering the portfolio had an overall satisfactory rating¹¹. Although regional and country management contribution, procurement and monitoring implementation were judged strengths of the sample of seven projects reviewed, weaknesses identified were quality of PADs, stakeholder analysis/consultation, implementing agencies capacity/commitment, evaluating impact/outcomes, prospects for timely project completion, readiness of first year program and institution building arrangements. Efforts to ensure that projects entering the portfolio are of high quality are ongoing with for example quality enhancement reviews (QERs), during which project teams seek the advice of peers in project design enhancement, now a routine step in project preparation.

6.4 *PSD/power sector evaluation.* This evaluation¹² confirmed the need to work across a continuum of public and private sector engagement, the importance of integrating environment and poverty reduction into the Energy Program, and of developing a sustainable approach to affordability for the poor. It found that the WBG had pursued multiple and complex reform objectives through a range of instruments and had achieved good results where country

¹⁰ 2002 *Annual Review of Development Effectiveness Achieving Development Outcomes: The Millennium Challenge*, Operations Evaluation Department, April 2003

¹¹ *Quality at Entry in FY02 (QEA5); A QAG Assessment*, April 8, 2003

¹² *Private Sector Development In the Electric Power Sector*, A Joint OED/OEG/OEU Review of the World Bank Group's Assistance in the 1990s, OED, World Bank, 2003

ownership and sustained political commitment existed but had underestimated the complexity and time required for reforms to mature and achieve lasting and equitable country-sector outcomes. A recommendation of the review that has since been implemented was that WBG management develop operational guidance for staff on public and private roles in the supply of electricity services.

6.5 **Extractive industry evaluation.** This evaluation¹³ found that the WBG is well positioned to help countries overcome the policy, institutional, and technical challenges that prevent them from transforming resource endowments into sustainable benefits and found that WBG EI projects have produced positive economic and financial results. It pointed to the need for explicit monitoring and evaluation of distribution of benefits and increased focus on governance and revenue management. The focus of WBG work in EI in recent years has shifted to greater emphasis in dealing with governance and revenue management issues.

6.6 **Inspection Panel.** Requests for review of seven energy projects were registered with the Inspection Panel in the past 2 years¹⁴.

6.7 **Management response to OED and IP evaluations.** Management response to the Board and follow up actions (for example the preparation of *Operational Guidance Note on Public/Private Roles in the Supply of Electricity Services* c.f. paragraph 3.18 above) will shape projects and programs going forward and improve the development effectiveness of the Bank's work in the sector. A past example is the management response to the IP report in July '03 on the Cameroon part of the Chad Cameroon pipeline project. The response contained a 15 point action plan to improve project quality and thus its development impact.

Project Monitoring

6.8 **Project monitoring indicators.** The QAG 2002 QAE review findings with respect to evaluating impacts/outcomes of projects is mirrored in a review¹⁵ of projects in all the infrastructure sectors carried out in 2003 that found systemic weaknesses in project M&E. These weaknesses affect ability to measure the development effectiveness of projects.

- outcomes were often confused with outputs or inputs and are not often made explicit.
- beneficiaries were not well identified, making outcome definition difficult.
- institutional development outcomes were often not well articulated.
- relevance of project and sector outcomes to country objectives were often unclear.
- funding for M&E systems & data collection methods were often not specified.
- projects did not spell out the use of project performance data for broader purposes such as government decision-making.

¹³ *Extractive Industries and Sustainable Development: An Evaluation of World Bank Group Experience*, OED, OEG, OEU, World Bank. 2003 <http://ifcln1.ifc.org/ifcext/oeg.nsf/Content/EIE>

¹⁴ The seven projects were; CAMEROON: Petroleum Development and Pipeline Project; and Petroleum Environment Capacity Enhancement ARGENTINA -SEGBA V Power Distribution Project UGANDA: Third Power Project (Credit No. 2268-UG) and Fourth Power Project; INDIA: Coal Sector Environmental and Social Mitigation Project and Coal Sector Rehabilitation Project

¹⁵ *Monitoring INF Outcomes: What Should we be measuring? Observations From a Review of Projects*, Infrastructure Vice Presidency, March '03.

6.9 ***Improvement in recent projects.*** Compared to earlier projects, energy projects approved in FY02 & FY03 incorporate better M&E features. For example, recent projects are more likely than earlier ones to contain explicit project impact measures linked to country outcomes e.g. *cost of electricity services to low income consumers* in the case of projects that promote electricity access; and *improved country fiscal performance* in the case of a project to improve utility financial performance.

Challenges

6.10 ***Methodological tools and development of a consistent results framework.*** It is a difficult challenge to measure objectives of institutional change (often contained in energy projects with reform components) and to link these to country “outcomes” such as increased access, better investment climate, environmental benefits and better fiscal performance. The IAP will promote the use of a standardized infrastructure assessment tool and work has begun on methodological development e.g. for regulatory assessment that supports these tools. A clear link between project achievements, sector outcomes and country outcomes needs to be established conceptually in order to position energy in the CAS. These links, tailored to country circumstances, need to be articulated in each project to demonstrate its relevance to achieving country outcomes.

Global Monitoring

“strengthen monitoring and reporting to measure progress towards program outcomes” Energy Program May 2001

6.11 The Energy Program proposed indicators of global outcomes in developing countries by 2011 to measure progress under each of the four business lines. These indicators and present trends are as follows:

- *increase in share of households with access to electricity from 65% to 75%. Present trend is that it will take until 2020 to reach the target. Source IEA (Fig. 6.2).*
- *increase share from 15% to 30% of large cities with acceptable air quality. Latest data (WDI) are for 1999 and projections to 2011 are not yet available.*
- *reduce CO₂ emission intensity of energy consumption from 2.9t/toe to 2.75t/toe. IEA reference scenario estimates CO₂ emissions to increase by 2011.*
- *reduce energy consumption per unit of GDP from 0.27toe to 0.24 toe/\$1000 IEA reference scenario estimates this target to be met.*
- *the power industry will make a positive net contribution to the budget in 50% of countries compared to 34% in 2001. Monitoring system is not yet in place.*
- *private ownership and financing will play a dominant role in the energy sector in 40% of countries compared to 34% in 2001. Monitoring system is not yet in place.*
- *there will be transparent regulation in the sector in 55% of countries compared to 35% in 2001. Monitoring system is not yet in place.*

6.12 ***New survey instruments for global monitoring*** Measurement of global outcomes has advanced in several areas since the Energy Program was presented in 2001 (paragraphs 6.14 to 6.20 below).

6.13 Access of households to electricity and clean cooking fuels.

Country-level data on household energy access can now be derived from a variety of survey instruments. The principal survey instruments are Demographic and Health Survey (DHS-USAID), Living Standards Measurement Survey (LSMS-WB), and, since 2000, the World Health Survey (WHS-WHO). World Development Indicators (World Bank, 2003) included rates of electricity access for a large number of countries and cities drawing on data from surveys of the IEA and the UN Center for Human Settlements. Table

Table 6.2 Electrification Rates by Region

	2000	Forecast 2015
Africa	34	43
<i>of which North</i>		
Africa	90	98
<i>of which Sub-</i>		
Sahara Africa	23	33
South Asia	41	53
Latin America	87	94
East Asia	87	94
Middle East	91	97
All Developing Countries	64	72

Source: IEA 2002

6.2 provides a regional overview of electrification rates by region drawing on the IEA data. In the context of the results measurement system for IDA14 and the Infrastructure Action Plan, DECDG in late '02 began an investigation of data availability to study the feasibility of including the indicator *proportion of people who have an electricity connection in their home and who use modern energy as their main cooking fuel* in the results measurement system of IDA.

6.14 Air Quality in Cities. The *World Development Indicators* (World Bank, 2003) provided indicators for particulate matter, sulfur dioxide and nitrogen dioxide drawing on data from various national sources and reported by the UN and World Resources Institute.

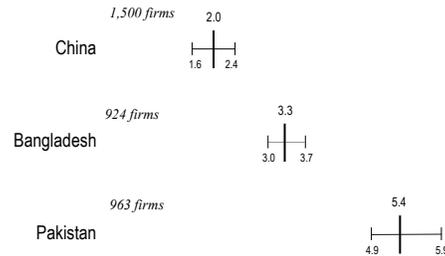
6.15 CO₂ emission intensity energy intensity per unit of GDP. These data for developing countries based on national energy balances are calculated by the IEA and reported annually with a time series from 1971 available.

6.16 REDI sector performance indicators. The REDI diagnostic instrument that is a key element of the Infrastructure Action Plan will provide, for a given country, the results of the diagnostic of the state of infrastructure services and institutions and the associated investment needs and the related and emerging policy issues. The discussion of each policy area (access, affordability, economic and financial efficiency, fiscal sustainability, service quality, institutional development) are to be supported by a set of standardized quantitative and/or qualitative indicators. One key element of each REDI will be an assessment of the infrastructure regulatory system for that country. To facilitate this work a study will be undertaken during FY04 to develop a methodology for the assessment of the effectiveness of infrastructure regulatory systems.

6.17 Energy service reliability and cost. Indicators of the impact of energy service reliability and cost are now being systematically collected in Investment Climate Assessments (ICAs) that are an element of the World Bank Group's PSD strategy. These represent an initiative to systematically analyze conditions for private investment and enterprise growth in countries throughout the world. Underpinning all ICAs is a standard core investment climate survey instrument, which allows the comparison of existing conditions and the benchmarking of conditions to monitor changes over time. As part of the standard firm level survey, establishments are asked about:

- electricity cost
- the loss in sales value caused by service interruptions (Figure 6.1)
- time taken to get an electricity connection
- ownership and cost of electricity self generation

Figure 6.1 Sales Lost to Power Outages (percent)



Surveys were carried out in 23 countries from FY01 through FY03 and surveys for more than 50 other countries are planned through FY07.

Monitoring Implementation of the Energy Program

6.18 Future Program Implementation Progress Reports (IPRs).

The report "Sector Strategy Papers: Stocktaking and Future Directions," was discussed by CODE on November 3, 2003. The report found that IPRs tend to be overly comprehensive, follow different formats and schedules making it difficult to form an integrated and coherent picture of progress that would permit an assessment of how all the sector priorities are balanced against country priorities and trade-offs in the context of aggregate country programs. The Committee endorsed the proposed new document framework for reporting on the implementation of sector strategies. Specifically, a Sector Strategy Implementation Update (SSIU) paper will be sent by OPCS to the World Bank Board after the closure of each fiscal year, providing a consolidated assessment of progress with the implementation of the Bank's key sectoral and thematic strategies. The SSIU will replace individual sector Implementation Progress Reports (i.e., sector IPRs will no longer be presented to the Board). To facilitate preparation of the consolidated SSIU report, the individual sectors will provide short reports according to a common format covering achievements and challenges, the impact of external events, the status of outcome indicators as well as the status of Bank inputs and outputs (e.g. reflection of sector strategy in country strategies and ESW).

6.19 Accountability for Energy Program implementation. Principal responsibility for implementing the Energy Program rests with country departments and sector units responsible for energy, under the direction of regional management teams. Regional management teams play a key role in validating and adapting the Program, selecting focus countries in which to scale up activities, allocating resources for staffing, and ensuring that energy sector development is integrated into the broader development agenda. The Energy and Mining Sector Board, Energy Trust Fund Programs, Energy Thematic Groups, Energy anchor and Network Vice Presidency provide a range of support functions such as strengthening cross-sectoral linkages, coordinating the corporate agenda, reporting on sector performance; generating and disseminating knowledge; and strengthening partnerships with external agencies (see Table 6.3). The Energy and Mining Sector Board represents the energy practice at the corporate level and provides leadership on: (i) sector strategy (ii) human resource management; (iii) the knowledge and learning agenda; and (iv) financing and support of thematic groups and (v) portfolio management. The Board comprises energy sector managers from the regional energy units, MIGA, IFC, OED, and PFG. The Energy anchor, located in the Water and Energy Department, is a compact unit with nine higher level staff. Its core functions are to: (i) serve as secretariat for the Sector Board; (ii) develop corporate strategy and policy in consultation with sector units and other networks; (iii) act as an information clearing house; (iv)

provide state-of-the-art skills through cross support for regional operations; (v) disseminate knowledge and policy research etc; (vi) host Bank executed partnerships and (vii) strengthen cooperation with external partners.

Table 6.3 Sharing Accountability for the Energy Program within the WBG

ENTITY	Portfolio			AAA			KM		M&E	
	Sector Specific	Multi Sector	Management	Country Specific	Sector Specific	Multi Sector	Advocacy	Learning/ Training	Project	Strategy
Regional Unit	1	1	1	1	1	1	1		1	2
Anchor	3			2	1	2	1	2	2	1
Sector Board	4	4	2	3	3	3	3	2		
PSI VP	3	3	3	3	3	3	3	3		
Energy-related TF				2	1	2	2	2		
IFC/ MIGA	1	1								
WBI				2	2	2	1	1		

Key: 1 = Primary Responsibility, 2 = Support to Primary, 3 = Reporting, 4 = M & E

7. LOOKING FORWARD

7.1 *Overview.* In this section the report highlights key elements of the work programs of the regional energy units, IFC and the oil and gas global product group planned in FY04 and FY05. The work programs are geared to advancing sector reform, increasing electricity access and use of clean household fuels, ensuring the sector's fiscal sustainability, enhancing the governance and transparency of oil and gas revenues, promoting more effective use of sector revenues for economic development and poverty reduction in resource-rich countries, and ensuring sustainable energy use by scaling-up renewables, phasing in tighter fuel and emission standards, and enhancing energy efficiency. Skills development and recruitment are key to delivery of the work program as are institutional efforts to develop more efficient processes and to introduce innovations in WBG instruments that better respond to client needs. The work programs are flexible and will necessarily respond to changing internal WBG and external environments. The work programs are discussed below in terms of their thematic or sub-sector focus and in terms of Bank instruments.

Thematic Focus of Activities

7.2 *Sector reform.* Sector reform is a cornerstone of WBG work in the sector in all regions. Supporting reform calls for a flexible approach. Once countries begin to move and start to tackle difficult issues of price reform, reduction and eventual elimination of subsidies, introduction and enhancement of effective competition where applicable, and sector governance, opportunities for WBG investment support will emerge. While general principles of reform are widely accepted there is a great deal of experience now available of country specific alternative approaches to implementation. Distilling and disseminating these experiences is critical and is one where the WBG plays an active role. It is important to gain a better understanding of the short-term and long-term impact of different reform steps on household welfare, especially among the poor, and analyze data to quantify these effects. Ongoing work supported by ESMAP includes analysis of the impacts of power sector reform in eight African countries and a study that investigates links between sector reform, the supply of energy and the use of energy by poor households in Ghana, Botswana, Senegal and Honduras. ESMAP, PPIAF and Rapid Response will remain vital to ensuring that knowledge on experiences is captured and disseminated to practitioners. The findings of these studies should inform future reform steps as well as possibly adjust the sequencing, timing, and social safety nets in on-going reforms. The Energy and Mining Sector Board Discussion Series will also continue to play a role in this regard.

7.3 *Regional energy integration.* Regional energy integration (e.g. power pools and electricity trade between neighboring countries) is expected to provide a powerful stimulus to advancing sector reform in countries of SE Europe, west and southern Africa, the Middle East and North Africa and SE Asia. The WBG will work closely with regional Banks and IFIs to coordinate technical assistance and investment in development of these regional markets. Projects that promote regional energy trade pose particular challenges that stem from the participation of several or more countries which are often at different stages along the reform path. With countries likely to proceed at different speeds under an umbrella commitment it is necessary to use an instrument that enables each country/project to proceed at its own pace and not be delayed by the Bank needing to combine several projects for the purpose of processing or approval. The instrument used in the Southern African Power Market project (a horizontal

adaptable program loan) enables the Bank to provide regional financial support to a regional program, yet financing is tailored to the needs of individual countries.

7.4 *Extractive Industries (EI)*. The WBG will support extractive industries when they can contribute positively to sustainable development. The core elements of the WBG's strategic framework in this respect will be to help governments create and manage an effective policy and regulatory framework so that local communities benefit from investments through meaningful consultation and information disclosure, and reasonable benefit and risk sharing, good use is made of mineral resources through effective oversight and management of the sector and judicious use of the revenues generated, and global issues are responsibly considered given national priorities and needs. Focus countries for WBG assistance in oil and gas EI will include Nigeria, Angola and Timor Leste. Areas of focus for IFC financing will include gas and coal developments in which it will aim to increase the positive sustainable impact of private projects it supports through working with sponsors to address social and environmental issues and to promote related SME development. With respect to coal mining, most Bank coal-related financing has been aimed at assisting countries to close uneconomic mines and restructure their coal industries with a view to realizing efficiency gains.

7.5 *Petroleum revenue management*. Petroleum revenue management has become an increasingly important focus of WBG activities over the past 3 to 4 years and this emphasis will be strengthened over the next several years. Many oil-dependent developing countries and countries in transition have seriously under-performed relative to their potential, both economically and socially. Further, they have experienced more than their fair share of civil unrest and even violent conflict. Weak governance, particularly with respect to the management and transparency of oil revenues, appears to be a major contributing factor. WBG support in this area ranges widely, covering: revenue reporting, monitoring and oversight; stabilization and savings policies and programs, and related macroeconomic issues; and budgetary and expenditure policies and oversight. Typically, this work is closely coordinated with colleagues in PREM, and with the IMF. WBG executive management recently endorsed a stepped up effort in support of extractive industry revenues transparency, including management of a multi-donor trust fund. Nigeria, Angola, Azerbaijan, Timor-Leste, Equatorial Guinea, and Sao Tome Principe are among the countries with active WBG programs in this area. While these activities are primarily policy related, it is important to note that, on the investment side, they are complemented by the IFC's corporate governance policies.

7.6 *Renewable energy*. For the last ten years, the Bank has been among the largest and most active investors in alternative energy (comprising small hydro, solar, wind, geothermal, biomass, energy efficiency and district heating) as part of its effort to promote and support sustainable development. Today, the IBRD/IDA active portfolio in alternative energy comprises over \$1.7 billion in loans, credits and grants in 72 projects in 36 countries, accounting for 14 percent of our energy portfolio compared to 4 percent in 1990. Many of the investments are jointly supported by GEF, PCF or CDCF. In order to further scale up investments in support of the Infrastructure Action Plan, wide ranging consultations both internally and with bilateral and multilateral partners is ongoing and will be pursued vigorously.

7.7 *Electricity access*. In Africa where access rates are lowest, the focus of the regional program will be on projects that support energy trade between neighboring countries in west and southern Africa and in the Nile Basin. Regional trade can promote the development of low-cost supply that can accelerate access especially in landlocked countries with small independent systems where costs are highest. In parallel, the WBG will support countries with relatively

good policies with investment projects that promote access. The latter include Burkina Faso, Ethiopia, Kenya, and Senegal. WBG support will be through sector investment lending and (in cases where the necessary fiduciary safeguards are in place) through programmatic loans. In countries of Latin America, East Asia and the Middle East where access rates are relatively high, the focus of WBG support will be to leverage Government programs that make use of innovative subsidy and financial mechanisms. These include Brazil, Chile, Honduras, Mexico, the Philippines and Vietnam. In low-income countries of Central Asia (CIS-7) a needs assessment is being undertaken. WBG support in the latter countries is likely to be through investment lending for replacement of dilapidated infrastructure and policy advice that addresses the design of social safety nets that ensure essential consumption of hot water and electricity by low-income consumers. In South Asia, India has perhaps as many as 500 million without access to electricity. In South Asia as in all regions, WBG work focuses on nesting access operations more firmly in work on broader power sector reform and on testing the applicability of output-based aid as a means of improving the targeting and efficiency of subsidies.

7.8 *Clean household cooking fuels.* Increasing recognition of the impact of smoke emissions from the combustion of solid fuels in homes on the health of household members has led to an enhanced work program on understanding policy options for switching to cleaner household energy. The WBG has been involved in analyzing household fuel use patterns and determinants of household fuel choice, and identifying areas where sector reforms and subsidy restructuring may help increase access of households to liquid and gaseous fuels and cleaner combustion technologies. These programs, with a view to formulating policy advice, are currently on-going in sub-Saharan Africa, Guatemala, India, and Pakistan.

7.9 *Improving air quality.* On-going work includes a regional program on gasoline lead elimination in sub-Saharan Africa; a regional program on urban air quality management in South Asia; clean air initiative programs in Latin America and the Caribbean, Asia, and sub-Saharan Africa; and preparation of a policy handbook on mitigating air pollution from mobile sources which is undergoing wide consultation inside and outside the Bank.

7.10 *Gas flaring reduction.* The activities under the Global Gas Flaring Reduction Partnership (GGFR) which focuses on 15 countries responsible for about 80% of global flaring will carry on through FY05. Partners are governments and their national oil companies and major international oil companies with the WBG.

7.11 *Improving sector contribution to macroeconomic stability.* WBG support for countries to implement sector reform measures including restructuring, privatization, reduction of subsidies, cost recovery and revenue management improves the sector's contribution to macroeconomic stability. Sector staff will continue to work with colleagues in PREM and the IMF to ensure that Governments pursue better policies and that policy advice is supported by appropriate conditionalities in adjustment lending and in IMF stand-by loan facilities.

7.12 *Mining incl. coal mining.* The WBG will expand its current work beyond the traditional TA aimed at developing an enabling environment for mining, to providing more focus on issues such as sector governance and local economic development. This expanded area of activities will also include work in the coal sub-sector on a selective basis. For many developing countries, coal is and will be a major source of energy. The net impact of the future development of their coal industries is going to depend not just on how large they grow but how they develop. In both cases, there is considerable potential for significant improvements in

safety and in environmental performance including coal production methods and coal quality that will impact on the efficiency of coal utilization (and thus on the greenhouse gas emissions per unit of coal used).

WBG Instruments

7.13 *WBG investment lending.* Current indications are for strong rebound in demand for WBG investment in the sector in FY04 and FY05 and beyond. The picture varies greatly by region and country. It includes support for regional energy integration in west and southern Africa, in the countries of the Nile basin, in southeast Europe and in southeast Asia. Urbanization and economic growth in Asia and elsewhere makes it urgent that infrastructure investment takes place in a timely manner. Reconstruction and rehabilitation needs in Iraq and Russia may require WBG support. In all regions, most of the investment needs will be met by public and private investment but there will be strong demand for WBG investment and guarantees to complement local and foreign participation in energy infrastructure investment projects. Sector wide approaches (SWAPs) are another approach well established in the social sectors that may have good applicability in the infrastructure sectors if safeguard and fiduciary issues can be satisfactorily resolved. Similar issues arise in the case of multi-sector programmatic operations (such as PRSCs in IDA countries).

7.14 *Non-lending (economic and sector work).* Non-lending work is critical in order to assess the needs for investment and institutional development in the energy sector. There has been a trend of increasing collaboration of energy staff and staff in other specializations including macroeconomic management and poverty reduction in the past few years. Non-lending work also serves to identify what is appropriate WBG assistance including WBG instruments and helps develop tailored country and regional business strategies. These efforts have often helped establish energy in a central role in WBG country assistance strategies. In the ECA region country infrastructure strategies (that assess the physical condition and quality of all infrastructure services and identify institutional, financial and other constraints to investment, operation and maintenance) have been a powerful instrument with which to engage Governments and other donors and have led to identification of WBG assistance.

7.15 *New models for infrastructure finance and risk mitigation, including guarantees.* Development of new models for infrastructure finance with WBG support are critical, especially for middle income countries. Approaches will have to take account of specific project and country circumstance with different approaches necessary in low and middle income countries and countries at different stages of capital market and safeguard development. Work in this regard includes development of a performance-based turnkey infrastructure procurement model. A number of innovations are underway or planned to increase deployment of WB guarantees. These include: designing WB guarantees for local currency debt; support with other donors the establishment of a financial facility (GuarantCo) for provision of guarantees for sub-sovereign governments, infrastructure agencies and private projects for infrastructure sub-sovereign financing without a sovereign guarantee; studying how guarantee exposure is accounted for in country debt analysis with a view to reducing the burden on host governments in terms of contingent liabilities for government guarantees to foreign financiers under private projects; examining the potential application of a foreign exchange liquidity facility to overcome temporary project problems due to local currency devaluation; and making processing of guarantees less onerous and faster. In IDA countries where there is substantial demand for WBG lending to support energy infrastructure, a constraint is the IDA envelope or ceiling on financial assistance. Work is also underway to examine the treatment of WBG guarantees

against the IDA envelope and their deployment in blend countries with a view to lessening constraints on their deployment.

7.16 Energy components in multi-sector operations (e.g. PRSCs). Integrating energy components in multi-sector operations poses particular challenges. Few of the 14 PRSCs so far approved in eight countries have contained an energy component (Ghana is one that has and there a few others in preparation that address energy policy changes). A feature of PRSCs is that they provide direct budget support and are a way of minimizing the number of operations in the lending programs of smaller countries by “bundling” support for a number of sectors in a single multi-sector loan. Delivering energy operations through PRSCs - may be a question of timing dependent on the success of the Government in putting in place necessary fiduciary safeguards in procurement and public expenditure management and a question of size as some large energy projects may be best delivered through traditional investment operations using traditional Bank procurement. Requirements that have been identified for PRSC type operations that incorporate energy components include:

- Effective fiduciary safeguards and monitoring in budget processes and in the energy sector for reliable tracking of flows of funds
- A PRSP which has clearly established linkages with energy services and whose overarching poverty reduction goals can be translated in terms of energy services objectives
- Coordination mechanism between government energy programs and other sectors’ programs

7.17 GEF Pipeline. Increasingly, GEF will continue to leverage WBG investment lending in preference to freestanding projects. Projects under preparation include projects for energy efficiency in the provision of heat to households in Bulgaria, China, Mexico, Serbia and Montenegro; the use of renewables to support electricity access in Madagascar, India, Vietnam; the development of renewables for electricity generation in China, Egypt, Mexico, Morocco, and Poland; and to support industrial energy efficiency in Tunisia. Projected levels of financing for climate change activities (largely energy sector related activities) for the period FY03-06 are about 25% of total GEF resources.

7.18 Carbon Finance. The Carbon Finance business has grown from \$135m at the first capitalization of the Prototype Carbon Fund in 2000, to total funding commitments of over \$400m currently in several trust funds: PCF, Netherlands CDM Facility, Community Development Carbon Fund (CDCF), BioCarbon Fund (BioCF), and the voluntary World Bank Staff Climate Change Program. Additional commitments from other OECD countries are under negotiation and are expected to be signed this fiscal year, regardless of the status of entry into force of the Kyoto Protocol. Interest income and additional donor contributions finance a program of technical assistance under the umbrella “CF-Assist” program. The overarching goal of the Carbon Finance Strategy is to reduce greenhouse gas emission reductions – directly, by helping to develop the market for environmental permits under the Kyoto Protocol, and indirectly, by supporting mechanisms to catalyze investment in renewable energy, energy efficiency (including district heating rehab) and fuel conversion. A key prong of the strategy is to ensure that these mechanisms benefit the poor; this objective underpinned the development of the CDCF. To this end, the carbon finance business is working closely with GVEP, ESMAP, PFG and regional sector staff, as well as external stakeholders (UNEP, GEF, commercial banks and insurers, development finance institutions etc.) to develop financial tools to improve the

financial viability of—and to improve access to funding by—economic renewables and energy efficiency projects.

7.19 *Safeguards.* Opportunities exist to improve the way the WBG undertakes its work on safeguards – especially with regard to consistent interpretation and timely reviews. Initiatives underway include: work with other donors and clients on common approaches and environment impact assessment procedures with a view to use of client systems when feasible; improving collaboration of safeguard specialists and energy sector staff in project design with in some cases integration of safeguard specialists in project teams; and more efficient dispute resolution mechanisms.

7.20 *Partnerships.* Global partnerships such as ESMAP, ASTAE and PPIAF will continue to support WBG analytical work in the sector and dialogue with country counterparts. The WBG regional units will continue to forge partnerships with regional multilateral organizations such as with the Asian Development Bank, the African Development Bank and the EU and in areas of common interest.

ANNEX 1. PROGRESS IMPLEMENTING THE ENERGY PROGRAM – REGIONAL OVERVIEWS

Africa Region	
Priorities	Examples of Activities
Helping the Poor Directly	
Double access of the poor to modern energy services over a ten year period in order to counter the poverty impacts (e.g. time use & health impacts) of traditional energy use.	(a) increased proportion of new lending that has access expansion as an objective
	(b) TA and lending for the Chad Cameroon pipeline project aims to support use of petroleum revenues for social infrastructure. Angola, Equatorial Guinea and Sao Tome are other focus countries for WBG assistance on petroleum revenue management.
Improving the local economic and social impact of mining.	(c) promoted energy in multi-sector strategies through regional workshops
	(d) created focal points within the regional PSI group to coordinate inputs to PRSPs & CASs. The quality of PRSPs has improved as a result (e.g. the Kenya PRSP contains a costed energy sector action plan and has energy performance indicators)
	(e) increased cooperation with Bank colleagues and clients working in other sectors to address the energy needs of the poor through CDDs, PRSCs, multi-sector ESW and other instruments
	(f) the Gas Flaring Reduction Initiative is developing concepts for how natural gas that would otherwise be flared can be used by local communities close to the flaring sites
	(g) investment loans include one in Ethiopia that aims at community management of forests for improved woodfuel supply and reduced deforestation as well as targeting new electricity connections for 850 thousand people
	(h) IFC's advisory services are observing a growing interest from governments in assistance with structuring rural electrification projects for private sector participation. Some of these projects will embed output based aid principles in subsidy design. Projects are being pursued in Senegal, Mali, Cameroon and Uganda for example
	(i) local economic development & access to water & electricity for mining communities in Mauritania
Improving Macroeconomic & Fiscal Balances	
Energy subsidies, poor revenue collection, waste of energy resources exert substantial macro-economic pressure on the economies of many African countries.	(a) increased support for private sector participation in order to improve efficiency (e.g. Uganda, Tanzania)
Electricity prices remain inadequate to cover operating costs & generate funding for investment.	(b) coordination with IMF in addressing macro-implications of the energy sector (e.g. Ghana on petroleum product and power tariffs).
Excessive losses of energy in distribution systems compound the financial problems of the utilities.	(c) working with PRSC teams to address issues of privatization, taxes, subsidies and tariffs through the PRSC instrument rather than through investment lending operations.
Petroleum revenue management is a priority in the oil producing countries.	(d) petroleum revenue management (e.g. in Chad) and petroleum revenue diagnostics (e.g. in Nigeria and Angola)
	(e) TA for petroleum pricing reform (e.g. Cape Verde, Ghana)

Africa Region (continued)

Priorities	Examples of Activities
<p>Promoting Good Governance & PSD</p> <p>Reforms of the policy, legal and regulatory frameworks in the electricity and oil and gas sectors.</p> <p>Participation of the private sector as a principal means of addressing governance issues.</p>	<p>(a) examples of WBG investment projects supporting private sector participation are the Songo Songo Gas project in Tanzania, Bujagali hydro project in Uganda, an energy access project for Ethiopia, a regional gas development project in Mozambique & South Africa.</p> <p>(b) given limited private sector investment in African countries at this time, interim options such as affermage/management contracts arrangements are being supported by the Bank (e.g. in place in Tanzania & Malawi and planned in Kenya & Ethiopia).</p> <p>(c) sector work (ESW) ESW has supported design of policy and regulatory frameworks (e.g. Kenya and Sierra Leone). IFC advisory activities support privatizations (e.g. Tanzania)</p> <p>(d) governance issues are being addressed through the PER, CFAA & CPAR processes with involvement of energy staff. Governance issues in petroleum revenue management issues are being addressed in a number of countries.</p> <p>(e) work on private provision of infrastructure in Nigeria and preparation of a PSI strategy for Malawi exemplifies successful cross sector cooperation.</p>
<p>Protecting the Environment</p> <p>Bank support to improve access aims at replacing household use of biomass fuels with modern fuels including renewables when viable.</p> <p>Lead is added in high concentrations to gasoline in many of the Africa countries and the poor are especially vulnerable to the serious health impacts.</p> <p>Clean up and rehabilitation of mining environmental impacts.</p> <p>Bank support for environmental management planning.</p>	<p>(a) interventions to support modern energy access (see above)</p> <p>(b) projects that promote fuel switching (natural gas in place of petroleum) as in the Songo Songo Gas project in Tanzania and the West Africa Gas Pipeline Project which will replace crude oil in power generation in Ghana and the Southern Africa Regional Gas project which will utilize gas to replace coal in Sasol's chemical industries in South Africa.</p> <p>(c) a number of projects promote the use of renewable energy supported by GEF grants. (e.g. Ethiopia, Mozambique & Burkina Faso)</p> <p>(d) a geothermal power project in Kenya is being prepared (for PCF financing).</p> <p>(e) a regional program to support gasoline lead elimination in sub-Saharan Africa</p>

East Asia

Priorities	Examples of Activities
Helping the Poor Directly	
Provision of adequate, affordable and reliable energy services in rural areas, in partnership with the private sector.	<p>(a) the lending programs in China, Vietnam and the Philippines exemplify a strong poverty focus.</p> <p>(b) in China the program has shifted from generation expansion and now includes (i) strengthening T&D systems to better provide electricity to the rural households; (ii) application of renewable energy sources in areas inaccessible to the national grid and to supplement grid power supply, (iii) increasing local management of operation and management, conversion of commune electricity groups to joint-stock cooperatives or companies; and (iv) strengthening of institutional capacity to plan and implement rural energy projects. Hydro projects in China supported by the Bank pioneer use of revenues from the project for poverty reduction through the provision of social infrastructure.</p> <p>(c) in the Philippines an adaptable program loan rolled out in 4 phases over a period of about 14 years supports the Governments' aggressive rural electrification program.</p> <p>(d) in Vietnam the Bank is supporting rural electrification access in the poorest provinces.</p>
Improving Macroeconomic & Fiscal Balances	
Mobilization of private sector financing to enable Governments to shift investment costs to the private sector and free scarce public resources. Oil revenue management.	<p>(a) TA to promote sound fiscal terms in oil contracts and effective, transparent revenue management (Petroleum Fund) in Timor Leste.</p>
Promoting Good Governance & PSD	
Deepen sector reform and increase the overall efficiency of the power and oil & gas sectors.	<p>(a) lending interventions have been designed to (i) support implementation of restructuring and power market development; (ii) assist with the transition from monopolies to competitive markets; (iii) promote private sector participation; (iv) improve corporate governance by instituting more effective financial management and information technology; and (v) develop effective institutional and regulatory capacity. (e.g. China, Philippines, Vietnam)</p> <p>(b) sector work (ESW) and TA focus on assisting the central government to develop legal and policy frameworks, create credible regulatory entities and an enabling body of regulations for tariff and investment oversight, define asset divestiture options, and clarify market development strategy. An example is the WBG program in China on energy sector reform and regulation.</p> <p>(c) IDA Partial Risk Guarantee in Vietnam for the development of Phu My 2 Phase 2 Power project that leverages private sector investment and reduces use of imported diesel oil in power generation.</p> <p>(d) in the poorer countries Bank support for rural electricity access through the implementation of public/private partnership pilot schemes for mini-grids, increased participation of independent power producers in renewable energy-based power supply; and transformation of ECs to financially viable companies able to attract private funding.</p>

East Asia (*continued*)

Priorities	Examples of Activities
Protecting the Environment	
<p>A shift has taken place from lending for large-scale power projects for China and other middle income countries to fuel economic growth to new lending for energy conservation, district heating, and renewable energy.</p>	<p>(a) the regional program makes extensive use of a set of complementary instruments (ASTAE, ESMAP, GEF) that has allowed it to carry out the upstream work required to promote environmentally sustainable projects, either through stand-alone or in association with Bank/IDA lending. An example of such projects is an energy conservation project in China that has scaled-up from the exclusive use of Bank's lending to the design of a financial facility that leverages domestic financial sources.</p> <p>(b) in China a large renewable energy scale up program is being prepared with WBG support.</p> <p>(c) IFC investments support renewable and clean energy projects (e.g. CHP generation in China. Its advisory activities promote pioneering approaches to finance renewables as in the grid connected solar PV Cepalco project in the Philippines).</p> <p>(d) two large energy conservation projects in China to introduce energy performance contracting by supporting a loan guarantee facility and a national association of energy managers.</p>

East Europe and Central Asia Region

Priorities	Examples of Activities
Helping the Poor Directly	
<p>Provision of clean, affordable heat (hot water for heating in the residential sector).</p> <p>Support to poor urban and rural households that are unable to cope with the rising cost of energy services through lifeline tariffs or well targeted means-tested subsidies.</p> <p>Improving the efficiency of energy service providers, rather than on tariff increases, as a first measure to improving service and financial viability.</p> <p>Providing finance, re-training and job creation for workers affected by mine closure and restructuring.</p>	<p>(a) close linkages with the social sectors in addressing social safety net issues in projects and ESW. ESW designed to analyze and propose solutions on how to improve access to and affordability of energy services has increased (e.g. projects and TA in Albania, Armenia, Georgia, Tajikistan). Some of these projects have combined WBG instruments (e.g. Pamir project in Tajikistan has IDA finance and IFC investment). Major conditionality addressing these priorities is now being incorporated in adjustment loans/credits with large energy components.</p> <p>(b) many of ECA's environmentally focused projects address energy efficiency issues and the use of less polluting fuels. This has major poverty impacts since pollution and the use of less clean fuels always affect the poor most and energy efficiency helps control and limit household energy expenditures.</p> <p>(c) Poland Coal loan providing redundancy packages for miners and Romania Mine Closure and Social Mitigation project providing micro-finance, new business support and employment incentives</p>
Improving Macroeconomic & Fiscal Balances	
<p>Reduction of the often large quasi-fiscal deficits in the energy sector has become a key focus of ECA activity.</p> <p>Cross-border energy trade is another priority that supports this and the other three business lines.</p> <p>Reducing or eliminating operating subsidies for the state owned coal mining sectors.</p>	<p>(a) investment lending, adjustment lending and the Bank's policy dialogue with governments and the IMF. Many general adjustment loans as well as IMF programs now have major energy conditionality, designed with close involvement of energy staff (e.g. Armenia, Romania, Bulgaria, Poland).</p> <p>(b) emphasis on improving financial viability and operating efficiency continues with WBG support.</p> <p>(c) the EC and the Stability Pact in creating a regional electricity market in south eastern Europe is an example of efforts to promote cross border trade that is supported by the regional program.</p> <p>(d) Romania and Poland mine closure operations</p>

East Europe and Central Asia Region (*continued*)

Priorities	Examples of Activities
<p>Promoting Good Governance & PSD</p> <p>Hitherto much hope was pinned on the private sector as the primary means to improve energy sector governance. With ECA experience on this mixed at best and with private sector interest likely to be weak in the medium term it is not realistic to anticipate this. As a result the region is pursuing private/public partnership options. Most importantly, is the emphasis on improving sector regulation, pricing, restructuring and divestiture of non-core enterprises (important both for SOEs as well as for private enterprises). These are the necessary conditions for sound operation of state-owned enterprises and for their eventual privatization.</p>	<p>(a) sector-wide governance issues are a major element of ECA's adjustment lending activities (e.g. in Albania, Azerbaijan & Romania). Governance issues are addressed as a matter of course in all ECA investment lending operations.</p> <p>(b) extensive policy work (ESW) on the governance of oil funds.</p> <p>(c) extensive use of the PPIAF facility and ESMAP to promote regulatory development and private sector involvement, in addition to having close cooperation in these areas with bilateral agencies such as USAID.</p> <p>(c) IFC advisory activities support future planned privatizations (e.g. Armenia, Albania and policy and transactional issues (e.g. Georgia, Moldova).</p>
<p>Protecting the Environment</p> <p>Continue the emphasis on clean energy supply (generation & energy trade) and on use (e.g. district heating).</p> <p>Coal mining reform with environmental rehabilitation of closed coal mines and improved environmental management planning.</p>	<p>(a) extensive use of GEF and PCF lending opportunities to promote environmental protection, either through stand-alone projects or in association with Bank/IDA lending.</p> <p>(b) rehabilitation of closed mines in Poland and Romania. Environmental management planning and improved environmental performance.</p>

Middle East and North Africa

Priorities	Examples of Activities
<p>Helping the Poor Directly</p> <p>Protect vulnerable groups through life line rates and/or well targeted subsidies</p>	<p>(a) rural energy study in Yemen.</p>
<p>Improving Macroeconomic & Fiscal Balances</p> <p>Promote the efficient & sustainable use of energy resources through: (i) introduction of appropriate pricing policies in the oil and gas and electricity sectors which provide incentives for increasing efficiency; (ii) adjust prices in a phased manner that ensures cost recovery and creditworthiness of enterprises in the sector to enable them to access domestic and foreign capital markets to finance their expansion, and (iii) where relevant revenue management.</p>	<p>(a) sector work (ESW) for improved revenue management in Iran and Algeria.</p>

Middle East and North Africa (*continued*)

Priorities	Examples of Activities
Promoting Good Governance & PSD	
Assist with implementing legal and regulatory reforms, Help to improve the overall investment climate to enable the private sector to invest in the energy sector and to help improve the management as well as efficiency of supply	(a) Algeria: Energy and mining TA loan (Hydrocarbon, mining and electricity reforms) and PPIAF; Consensus Building. (b) Jordan: Power sector reform (policy advice, competitive bidding, regulation, pricing, privatization, IPPs etc includes funding from USAID), SAMRA IPP and gas pipeline guarantee preparation and energy sector strategy. (c) Lebanon: Energy sector strategy (policy advice). (d) Yemen: Oil to gas strategy, technical assistance on power sector reform (part of Sana'a Emergency Project). (e) West Bank Gaza: reform studies (Electricity sector investment and management). (f) Tunisia: Electricity sector reform options study. (g) Saudi Arabia: Assistance to Electricity Regulatory Authority. (h) Kuwait: Power sector reform options diagnostic/study. (i) Bahrain: Power sector reform/privatization study and PER.
Protecting the Environment	
Promote the use of renewable energy resources. Although many of the energy resource poor countries have started to promote renewable energy resources such as wind and solar power and large or small scale hydropower, there remains considerable scope for further development.	(a) Jordan and Tunisia: ODS Phase out. (b) Energy and Environment Assessments: Egypt, Iran. (c) Health Impact WSS/Infrastructure (Regional). (d) Tunisia: Solar Water Heating (GEF). (e) Solar Thermal Project preparation (Egypt, Morocco). (f) Morocco: Energy Efficiency Project (GEF).
Improving energy efficiency and reduction of energy intensity.	

Latin America and Caribbean Region

Priorities	Examples of Activities
Helping the Poor Directly	
Expanding rural and peri-urban energy access & targeting poverty reduction through multi-sectoral interventions that emphasize economic and socially productive uses.	(a) investment projects that promote electricity access include projects in Argentina, Bolivia, Brazil, Ecuador, Mexico and Nicaragua. (b) carbon Finance (PCF) projects in over 10 countries prepared with Bank assistance support improved energy services while also often providing for increased water, education and health services.

Latin America and Caribbean Region (*continued*)

Priorities	Examples of Activities
Helping the Poor Directly (<i>continued</i>)	<ul style="list-style-type: none"> (c) advisory activities for better policies to ensure equity in energy subsidy and tariff design (e.g. Argentina, Brazil, Guatemala). (d) advisory activities to Governments on rural electrification (e.g. Bolivia and Peru). (e) IFC investment project that support energy access (e.g. El Salvador).
Improving Macroeconomic & Fiscal Balances	<ul style="list-style-type: none"> (a) adjustment operations (e.g. Brazil).
Promoting Good Governance & PSD	<ul style="list-style-type: none"> (a) examples of investment projects that support sector reforms are ones in Brazil and Dominican Republic for the electricity sector. (b) IFC focus is on countries with credible track record of sectoral reform and macroeconomic stability. IFC's investment in Transelec in Chile and in ISA in Peru (for extension of the electricity grid in these countries) exemplifies this approach. (c) IFC may also have a role in facilitating change in ownership from one private sector investor to another when a privatized utility needs capital investment but the existing sponsor seeks to liquidate its holding (the TDE project in Bolivia is such as case). (d) IFC investments also support new power generation (e.g. Macae thermal project in Brazil, Rio Bravo project in Mexico) and in distribution (e.g. El Salvador) although the distribution privatizations have considerably slowed in the region. (e) IFC advisory activities support future privatizations (e.g. ElectroLima in Peru and the distribution sector Panama)
Protecting the Environment	<ul style="list-style-type: none"> (a) carbon finance (PCF) projects prepared with Bank assistance in more than 10 countries contribute to the development of the market for emission reduction transactions by supporting development of the legal , regulatory and institutional frameworks for carbon emission reduction. These projects inter alia support market penetration of renewable energy technologies (e.g. grid wind based generation in the case of the Jepirachi project in Colombia). (b) sound environmental regulation and management in the sector is supported by projects in Brazil and Ecuador. (c) energy efficiency is supported by projects in Ecuador and Uruguay. (d) IFC investment operations (e.g. El Canada Hydro project in Guatemala)

South Asia Region

Priorities	Examples of Activities
<p>Helping the Poor Directly</p>	
<p>Promoting energy access. Better targeting subsidies to benefit the poor. Mitigating the health impacts of indoor air pollution.</p>	<p>(a) sector work (ESW) to analyze the status, obstacles and options to expand rural electricity and cooking fuels access (e.g. India, Bangladesh, Pakistan), subsidy incidence and the implications of current subsidy arrangements for the poor, the impact on women of access to modern energy, and the impact, and options for mitigating, indoor air pollution (e.g. India, Pakistan). (b) lending projects for rural access and facilitation of uptake of renewables, in collaboration with GEF (e.g. Bangladesh, Nepal, Sri Lanka).</p>
<p>Improving Macroeconomic & Fiscal Balances</p>	
<p>Unsustainable electricity and fuel subsidies are very large in some countries in the region and are not only a fiscal drain but are a barrier to greater competition and access.</p>	<p>(a) energy sector policy, AAA and lending has been complemented by an increasing emphasis on energy sector triggers in adjustment lending – reflecting the fiscal importance of improving power sector performance in client countries in the region (e.g. India, Pakistan, Bangladesh).</p>
<p>Promoting Good Governance & PSD</p>	
<p>Engagement in the power sector in the region has focused strongly on supporting power reform as regional progress in assisting the poor, promoting good governance, protecting the environment, and improving macro/fiscal balances hinges critically on the commitment and capacity of governments to address incentive and efficiency issues in the power sector.</p>	<p>(a) emphasis on non-lending instruments (policy dialogue and knowledge sharing, carefully targeted AAA work, hotline support) in states/countries not yet demonstrating commitment to the “hard” elements of reform, combined with a refining of collaboration with PREM colleagues to hone power sector triggers and conditionalities in structural adjustment and other multi-sectoral lending. As reforms progress and commercial viability begins to improve, lending options will increase – including, potentially, sectoral adjustment lending, and investment lending for example in addressing transmission bottlenecks. Where privatization becomes a viable option, the emphasis will shift towards guarantee operations, potentially combined with lending to support increased access.</p>
<p>Engagement in the mineral exploration sector to ensure that exploitation licenses are awarded in accordance with transparent processes and international standards.</p>	<p>(b) sector work (ESW) has covered such areas as the retrospective analysis of power reform strategy and the restructuring of state utility liabilities in India, tariff design advisory work, design of regulatory systems (e.g. Indian states), and gas market development (e.g. Pakistan). (c) in Afghanistan, Bank staff have provided advisory services to the government on mineral development policy and strategy, a baseline note on mining as a potential source of growth, and is helping draft a new mining law.</p>
<p>Protecting the Environment</p>	
<p>Advancing reform to change market conditions – such as chronically below-cost rural and agricultural tariffs and distorted subsidy systems in India – that pose barriers both to innovative entry of energy suppliers to meet rural needs and expand the role of renewables, and to scaling up of promising pilots.</p> <p>Urban air quality caused in part by poor fuel quality is harmful to health in many of the South Asian cities.</p>	<p>(a) current work focuses on nesting access and renewables operations more firmly in work on broader power sector reform, on testing the applicability of output-based aid as a means of improving the targeting and efficiency of subsidies, on reinforcing collaboration on both the broader climate change agenda and energy & health issues. An example of successful renewable energy scale up is the Sri Lanka Energy Services Delivery project that is targeting over 100,000 rural households and that will finance up to 85MW (8 percent of generation capacity) of small hydro implemented by the private sector. (b) sector work (ESW) supports a regional program on urban air quality management in South Asia; a cleaner air program in Sri Lanka; a clean fuels study in Pakistan; a two-stroke engine initiative in Asia examining the role of lubricants. These programs have led in Sri Lanka to advancing the date for lead removal (from gasoline) and sulfur reduction (from diesel) and in Bangladesh the banning of straight mineral oil for use in two-stroke engines. (c) IFC investment supports a number of renewable energy projects (e.g. wind in India)</p>

ANNEX 2. WORLD BANK GROUP ENERGY SECTOR FINANCING

Volume of Energy Components Financing (US\$m)

All Operations (IBRD/IDA, SF, GEF, Guarantees, etc.)

Instruments	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	FY02	FY03
Investments*	3,066	3,263	3,746	3,494	2,608	2,626	3,323	2,028	2,531	462	1,157	902	1,041	666
TA Investments		15	53	24	15	23	23	38	20		2	5		15
Adjustments**	102	28	216	104	64	113	340	174	441	207			515	
Operations in Other Sectors	69	354	191	336	423	539	567	704	222	822	483	736	458	525
Total	3,237	3,660	4,205	3,959	3,110	3,301	4,253	2,944	3,214	1,491	1,642	1,643	2,013	1,206
Total Bank	20,702	22,704	21,779	23,782	21,052	22,917	21,749	19,633	29,167	29,300	15,810	18,109	20,063	18,914

IBRD/IDA Operations Only

Components	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	FY02	FY03
Distr heat & energy		265	54		83	123	350	14	328	9	224	188	35	34
Gen energy sector	24	165	36	215	38	98	19	3	74	251	176	172	50	170
Mining & oth extract	31	428	27	30	30	22	557	219	902	254	51	11	194	75
Oil & Gas	430	1,549	635	867	1,241	694	8	160	241	266	116	74	227	72
Power	2,699	1,189	3,430	2,630	1,406	2,284	3,281	2,359	1,629	529	989	1,084	1,339	689
Renewable energy	53	64	21	212	270	53	8	127	10	128	17	2	129	48
Total Energy Components	3,237	3,660	4,203	3,955	3,068	3,274	4,223	2,883	3,185	1,437	1,572	1,531	1,975	1,088
Total Bank	20,702	22,686	21,706	23,696	20,836	22,522	21,352	19,147	28,669	29,146	15,276	17,251	19,519	18,513

IBRD/IDA Operations Only

Instruments	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	FY02	FY03
Investments	3,066	3,263	3,744	3,490	2,566	2,599	3,296	1,967	2,510	414	1,122	891	1,004	625
TA Investments		15	53	24	15	23	23	38	20		2	5		14
Adjustments	102	28	216	104	64	113	340	174	441	207			515	
Operations in Other Sectors	69	354	191	336	423	539	563	704	214	817	448	635	456	450
Total	3,237	3,660	4,203	3,955	3,068	3,274	4,223	2,883	3,185	1,437	1,572	1,531	1,975	1,088

IBRD Only

Instruments	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	FY02	FY03
Investments	2,868	2,957	3,497	2,990	2,398	2,079	2,872	1,673	1,809	337	884	729	122	370
TA Investments		0	28	14	15	4	17	37	20		2	0		12
Adjustments	100	28	150	78	64	113	340	174	376	189			515	
Operations in Other Sectors	26	288	61	262	310	457	415	648	159	636	383	337	66	192
Total	2,994	3,273	3,735	3,344	2,788	2,653	3,644	2,533	2,364	1,162	1,269	1,066	702	573

IDA Only

Instruments	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	FY02	FY03
Investments	198	306	247	500	168	520	424	293	701	77	238	162	882	256
TA Investments		15	25	10	0	19	7	1	0		0	5		2
Adjustments	2	0	66	26	0	0	0	0	65	18			0	
Operations in Other Sectors	43	66	130	74	112	82	148	56	56	181	65	298	390	258
Total	243	387	468	611	281	621	579	350	821	276	303	465	1,272	515

Volume of Energy Components Financing (US\$m)**All Product Lines (IBRD/IDA, SF, Guarantees, GEF, Etc.)**

Components	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	FY02	FY03
Distr heat & energy		265	54		96	147	377	46	349	12	254	189	37	68
Gen energy sector	24	165	36	215	38	98	19	3	74	251	176	175	55	170
Mining & oth extract	31	428	27	30	30	22	557	220	902	254	51	111	194	75
Oil & gas	430	1,549	635	867	1,250	696	11	160	241	266	116	218	227	74
Power	2,699	1,189	3,430	2,630	1,406	2,284	3,281	2,533	1,820	532	1,078	1,084	1,466	767
Renewable energy	53	64	23	216	289	58	8	155	12	177	27	11	150	53
Total Energy Components	3,237	3,660	4,205	3,959	3,110	3,307	4,253	3,117	3,398	1,491	1,702	1,787	2,128	1,206

All Product Lines (IBRD/IDA, SF, Guarantees, GEF, Etc.)

Prod Lines	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	FY02	FY03
Carbon Offset													0	0
GEF			2	4	41	33	10	61	22	54	55	9	33	40
GEF Med Size									1		1	1		1
Guarantees								173	184		60	244	115	75
HIPC Transfer													0	
IDF														0
IBRD/IDA	3,237	3,660	4,203	3,955	3,068	3,274	4,223	2,883	3,185	1,437	1,572	1,531	1,975	1,088
Special Finc.							20		7		14	3	6	2
Total Product Lines	3,237	3,660	4,205	3,959	3,110	3,307	4,253	3,117	3,398	1,491	1,702	1,787	2,128	1,206

All Product Lines (IBRD/IDA, SF, Guarantees, GEF, Etc.)

Sector Boards	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	FY02	FY03
Total Energy Components	3,237	3,660	4,205	3,959	3,110	3,307	4,253	3,117	3,398	1,491	1,702	1,787	2,128	1,206
Energy & Mining	3,168	3,306	4,015	3,622	2,687	2,768	3,686	2,413	3,176	669	1,219	1,051	1,670	681
Other Sectors	69	354	191	336	423	539	567	704	222	822	483	736	458	525

Volume of IBRD/IDA Financing; Energy sector projects and energy components in other sector projects (US\$m)

	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	FY02	FY03
Africa														
Energy sector projects	230	471	146	341	251	252	80	162	342	9	116	74	365	172
Energy components in projects of other sectors	32	16	61	32	93	40	78	17	20	117	60	124	125	152
Total financing	262	487	207	373	344	292	158	179	362	126	176	198	490	324
East Asia & Pacific														
Energy sector projects	788	275	1832	972	1,278	1,610	1,683	1,124	824	100	469	29	313	253
Energy components in projects of other sectors	2		92	46	239	117	2	441	62	48	172	113	1	1
Total financing	790	275	1,924	1,018	1,517	1,727	1,685	1,565	886	148	641	142	314	254
East Europe & Central Asia														
Energy sector projects	250	865	516	703	835	414	698	806	928	226	224	164	140	123
Energy components in projects of other sectors		161	25	84	79	321	340	168	90	454	175	172	78	140
Total financing	250	1,026	541	787	914	735	1,038	974	1,018	680	399	336	218	263
Latin America & Caribbean														
Energy sector projects	898	460	94	474	11	128	447	0	150	27	45	0	435	21
Energy components in projects of other sectors	29	119	12	60	11	61	49	33	1	18	34	108	11	75
Total financing	927	579	106	534	22	189	496	33	151	45	79	108	446	96
Middle East & North Africa														
Energy sector projects	37	213	380	165	64	0	0	64	0	49	0	0	0	0
Energy components in projects of other sectors		5		108			10	0	40	25			1	
Total financing	37	218	380	273	64	0	10	64	40	74	0	0	1	0
South Asia														
Energy sector projects	965	1,021	1,045	963	207	331	751	24	727	210	270	628	266	70
Energy components in projects of other sectors	6	53		7			84	46	1	154	8	118	239	81
Total financing	971	1,074	1,045	970	207	331	835	70	728	364	278	746	505	151
ALL REGIONS														
Energy sector projects	3,168	3,305	4,013	3,618	2,646	2,735	3,659	2,180	2,971	621	1,124	895	1,519	639
Energy components in projects of other sectors	69	354	191	336	423	539	563	704	214	817	448	635	456	450
Total financing	3,237	3,659	4,204	3,954	3,069	3,274	4,222	2,884	3,185	1,438	1,572	1,530	1,975	1,089

GEF Program					
Bank Approved (OP 5, 6, and 7 Projects)					
OP #	Number of Projects	GEF Amount (US\$ m)	Bank Amount (US\$ m)	Other Amount (US\$ m)	Total Amount (US\$ m)
5	19	213.3	535.9	1,544.6	2,293.8
6	22	218.3	512.9	1,113.6	1,844.9
7	1	4.0	0.0	1.3	5.3
Total	42	435.6	1,048.8	2,659.6	4,144.0

Bank FY	Number of Projects	GEF Amount (US\$ mil)	Bank Amount (US\$ mil)	Other Amount (US\$ mil)	Total Amount (US\$ mil)
1994	1	10.0	53.0	59.7	122.7
1995	3	32.3	0.0	68.2	100.5
1996	1	6.9	5.9	5.2	18.0
1997	4	68.0	44.2	190.1	302.3
1998	4	82.7	132.7	321.0	536.5
1999	5	59.8	151.5	443.7	654.9
2000	6	65.0	467.8	1,048.9	1,581.6
2001	4	14.0	13.5	154.8	182.3
2002	8	37.9	177.3	76.0	291.2
2003	6	59.1	3.0	291.9	354.0
Total	42	435.6	1,048.8	2,659.6	4,144.0

- OP 5 Removal of Barriers to Energy Efficiency and Energy Conservation
- OP 6 Promoting the Adoption of Renewable Energy by Removing Barriers and Reducing Implementation Costs
- OP 7 Reducing the Long-Term Costs of Low Greenhouse Gas Emitting Energy Technologies

IFC Power Investments FY 2001 - 2003

Country	Region	Project Name	FY (Board)	(US\$ Millions)						
				IFC Gross	IFC Net	Equity	Q-E	A Loan	B Loan	Other
Port Said	MENA	Port Said	01	200.5	48.0			45.0	152.5	3.0
Suez Gulf	MENA	Suez Gulf	01	200.5	48.0			45.0	152.5	3.0
UF Moldova	S. Eur & C.A.	RE Chiinâu, RED Centru and RED Sud	01	25.0	25.0			25.0		
India	S. Asia	GI Wind Farms	01	10.8	10.8		1.0			9.8
Brazil	LAC	Cataguazes	01	45.0	45.0			45.0		
China	E. Asia	Peak Pacific	01	25.0	25.0			25.0		
El Salvador	LAC	CAESS/EEO	01	120.0	45.0			45.0	75.0	
		Total FY 2001		626.8	246.8	-	1.0	230.0	380.0	15.8
Argentina	LAC	EDET	02	85.0	35.0		15.0	20.0	50.0	
Brazil	LAC	Macaé	02	350.0	75.0		10.0	65.0	275.0	
China	E. Asia	IEC	02	25.0	25.0		5.0	20.0		
Guatemala	LAC	EI Canada	02	37.0	15.0			15.0	22.0	
Peru	LAC	ISA Peru	02	30.0	18.0			18.0	12.0	
Tajikistan	S. Eur & C.A.	Pamir Energy	02	8.0	8.0	3.5		4.5		
Uganda	Africa	Bujagali (large hydro)	02	110.0	70.0			60.0		10.0
		Total FY 2002		645.0	246.0	3.5	30.0	202.5	359.0	10.0
Peru	LAC	ISA Peru	03	0.2	0.2					0.2
Chile	LAC	Transelec	03	60	60	60				
Jamaica	LAC	JPS Co.	03	45	45		45			
Bolivia	LAC	TDE S.A.	03	30	30		15	15		
China	E. Asia	Peak Pacific 2	03	10	10	10				
Brazil	LAC	CPPL Energia	03	40	40		40			
Mexico	LAC	Rio Bravo III	03	242	72		20	50	170	2
Mexico	LAC	Rio Bravo IV	03	242	72		20	50	170	2
		Total FY 2003		669.2	329.2	70.0	140.0	115.0	340.0	4.2

IFC Oil and Gas Investments FY 2001 - 2003

Country	Region	Project Name	FY (Board)	(US\$ Millions)						
				IFC Gross	IFC Net	Equity	Q-E	A Loan	B Loan	Other
Pakistan	CAMENA	Lasmo Pakistan	2001	40.00	40.00	0.00	0.00	40.00	0.00	0.00
Nigeria	Africa	Delta Contractor	2001	15.00	15.00	0.00	0.00	15.00	0.00	0.00
Albania	Europe	Patos Marinza	2001	10.00	10.00	0.00	0.00	10.00	0.00	0.00
		Total FY 2001		65.00	65.00	0.00	0.00	65.00	0.00	0.00
Africa Region	Africa	Osprey	2002	0.25	0.25	0.25	0.00	0.00	0.00	0.00
Colombia	LAC	Omimex Oil	2002	35.00	35.00	0.00	5.00	30.00	0.00	0.00
Gabon	Africa	Vaalco	2002	10.00	10.00	0.00	0.00	10.00	0.00	0.00
Kazakhstan	Europe	Karachaganak	2002	150.00	75.00	0.00	25.00	50.00	75.00	0.00
Pakistan	CAMENA	PPL Rights Issue	2002	6.60	6.60	6.60	0.00	0.00	0.00	0.00
		Total FY 2002		201.85	126.85	6.85	30.00	90.00	75.00	0.00
Nigeria	Africa	Adamac	2003	50.00	25.00	0.00	0.00	25.00	25.00	0.00
Cameroon	Africa	Pecten Mokoko II	2003	31.40	20.00	0.00	0.00	20.00	11.40	0.00
Venezuela	LAC	PCV	2003	225.00	125.00	0.00	45.00	80.00	100.00	0.00
Brazil	LAC	Queiroz Galvao	2003	40.00	40.00	0.00	10.00	30.00	0.00	0.00
Bulgaria	Europe	Galata Gas Field	2003	17.00	17.00	0.00	0.00	17.00	0.00	0.00
Indonesia	East Asia	PT SPA	2003	8.00	8.00	0.00	0.00	8.00	0.00	0.00
India	South Asia	Niko Resources	2003	30.00	30.00	0.00	0.00	30.00	0.00	0.00
		Total FY 2003		401.40	265.00	0.00	55.00	210.00	136.40	0.00

**Multilateral Guarantee Agency (MIGA) Guarantees issued to
Power and Oil & Gas projects: FY 2001–2003**

Investor	Inv. Ctr.	Host Ctr.	Sector	Sub-Sector
Contracts - FY03				
Entergy Power Development Corporation (EPDC)	United States	Bulgaria	Infrastructure	Power
Sasol Gas Holdings (Pty) LTD.	South Africa	Mozambique	Oil & Gas	Oil & Gas
Sasol Petroleum International (PTY) LTD.	South Africa	Mozambique	Oil & Gas	Oil & Gas
SLAP CABO, LLC	United States	Brazil	Infrastructure	Power
SLAP CABO, LLC	United States	Brazil	Infrastructure	Power
SembCorp Utilities Pte.	Singapore	Vietnam	Infrastructure	Power
SembCorp Utilities Pte. (pending)	Singapore	Vietnam	Infrastructure	Power
BNP Paribas	France	Turkey	Infrastructure	Power
BNP Paribas	France	Turkey	Infrastructure	Power
Enel (Maritza III) (pending)	Italy	Bulgaria	Infrastructure	Power
Rolls Royce (pending)	UK	Nigeria	Infrastructure	Power
Compania Espanola de Seguros de Credito a la Exportacion, S.A.	Spain	Algeria	Oil and Gas	Oil and Gas
Contracts - FY01 and FY02				
Guarantee Holder	GH_Nationality	Host_Government	Sector	Subsector
AES Horizons Limited	UK	Bulgaria	Infrastructure	Power
Bank Hapoalim B.M.	Israel	Nicaragua	Infrastructure	Power
Bergenshalvoens Kommunale kraftselskap AS	Norway	Nepal	Infrastructure	Power
BNP Paribas	France	Turkey	Infrastructure	Power
Consortio Electrica Punta Cana	Finland	Dominican Republic	Infrastructure	Power
Constructora Norberto Odebrecht S.A.	Brazil	Ecuador	Infrastructure	Power
COSCOL Petroleum Corp	USA	Dominican Republic	Oil and Gas	Oil and Gas
Deutsche Bank AG New York Branch	Germany	Brazil	Oil and Gas	Oil and Gas
Hydelec	France	Madagascar	Infrastructure	Power
International Water Services (Guayaquil) B.V.	Netherlands	Ecuador	Infrastructure	Electric, Gas & Sanitary Services
Keppel Fels Ltd.	Singapore	Brazil	Infrastructure	Power
Ormat Holding Corp.	Cayman Islands	Kenya	Infrastructure	Power
TRACTEBEL	Belgium	Turkey	Infrastructure	Power
Union Fenosa Desarrollo	Spain	Nicaragua	Infrastructure	Power
Union Fenosa Internacional S.A.	Spain	Dominican Republic	Infrastructure	Power
		Guatemala	Infrastructure	Power
		Moldova	Infrastructure	Power
Victory Oil B.V.	Netherlands	Russia	Oil and Gas	Oil and Gas

Carbon Finance Transactions through January 2004

Project Name	Emission Reductions Contracted (US\$ m)
Latvia: Liepaja Solid Waste Management	2.48
Chile: Chacabuquito Small Hydro	6.69
Brazil: Plantar Sequestration and Biomass Use	5.30
Costa Rica: Chorotega Wind Farm	0.92
Costa Rica: Cote Small Hydro	0.60
Colombia: Jeparachi Wind Farm	3.20
Uganda: West Nile Electrification Project	3.90
Guatemala: El Canada Small Hydro	7.50
Hungary: Pannonpower Pécs Fuel Conversion Project	5.01
Romania: Afforestation	3.08
Bulgaria: Svilosa Biomass	3.50
Czech Republic: CEA Energy Efficiency	2.00
Moldova: Soil conservation	5.18
Total	49.35
Energy sector as % of total	0.85

ANNEX 3. BIBLIOGRAPHY OF WORLD BANK GROUP DOCUMENTS REVIEWED FOR THIS REPORT

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ANNEX 4. WORLD BANK ENERGY RELATED WEBSITES

Energy Homepage Portal to WBG energy resources. <http://www.worldbank.org/energy/>

Environment homepage Portal to environment related resources e.g. safeguard policies and the Pollution Prevention and Abatement Handbook

<http://lnweb18.worldbank.org/ESSD/envext.nsf/41ByDocName/Environment>

Energy Sector Management Assistance Programme (ESMAP) A global technical assistance program which helps build consensus and provides policy advice on sustainable energy development to governments of developing countries and economies in transition.

www.esmap.org

Global Gas Flaring Reduction Partnership The main focus of the Partnership is to identify and find ways to overcome barriers that currently inhibit flaring reduction investments.

http://www.worldbank.org/ogmc/global_gas.htm

Global Partnership on Output-Based Aid A global trust fund to demonstrate and document OBA methods of supporting the sustainable delivery of basic services to those least able to afford them and to those currently without access.

<http://www.gpoba.org/>

WBG Guarantee instruments; partial credit guarantees, partial risk guarantees & policy based guarantees

http://www.worldbank.org/html/fpd/guarantees/html/guar_program.html

International Finance Corporation Link to IFC power and oil and gas global product groups.

<http://www.ifc.org/>

Multilateral Investment Guarantee Agency MIGA offers political risk insurance (guarantees) to investors and lenders, and helps developing countries attract and retain private investment.

<http://www.miga.org/>

Private Sector Development Resources for investment climate, private participation in infrastructure, privatization transactions, etc.

<http://www.worldbank.org/privatesector/>

Prototype Carbon Fund A public and private partnership to combat climate change. Its mission is to pioneer the market for project-based greenhouse gas emission reductions within the framework of the Kyoto Protocol and to contribute to sustainable development.

www.prototypecarbonfund.org

Public-Private Infrastructure Advisory Facility (PPIAF) A multi-donor TA facility aimed at helping developing countries improve the quality of their infrastructure through private sector involvement.

www.ppiaf.org/

Rapid Response is a knowledge resource specializing in policy advice on investment climate and privatization for developing countries.

<http://rru.worldbank.org/>

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