

Private Sector Development In the Electric Power Sector

**A Joint OED/OEG/OEU Review of the
World Bank Group's Assistance in the 1990s**

July 21, 2003

Operations Evaluation Department (OED)
Operations Evaluation Group (OEG)
Operations Evaluation Unit (OEU)

Document of the World Bank Group

Abbreviations and Acronyms

AAA	Analytical and advisory assistance	IDA	International Development Association
ADB	Asian Development Bank	IFC	International Finance Corporation
AFR	Africa Region	IPPs	Independent power producers
ARPP	Annual Review of Portfolio Performance	IRR	Internal Rate of Return
ASTAE	Asia Alternative Energy Program	LAC	Latin America and Caribbean Region
BOT	Build, operate, transfer	MAL	Maximum aggregate liability
CAE	Country Assistance Evaluation	MIGA	Multilateral Investment Guarantee Agency
CAS	Country Assistance Strategy	MNA	Middle East and North Africa Region
CCS	Country case studies	M&E	Monitoring and Evaluation
CPW	IFC Power Department	OED	Operations Evaluation Department, IBRD/IDA
DEC	Development Economics and Chief Economist Vice Presidency	OEG	Operations Evaluation Group, IFC
EAP	East Asia and Pacific Region	OEU	Operations Evaluation Unit, MIGA
EBRD	European Bank for Reconstruction and Development	PAD	Project Appraisal Document
EBRS	Energy Business Renewal Strategy	PPA	Power Purchase Agreement
ECA	Europe and Central Asia Region	PPAH	Pollution Prevention and Abatement Handbook
EHS	Environmental, health and safety	PPAR	Project Performance Assessment Report, OED
ERR	Economic Rate of Return	PRSP	Poverty Reduction Strategy Paper
ESB	Energy Sector Board	PSD	Private sector development
ESMAP	Energy Sector Management Assistance Program	PSDE	Private sector development in the electric power sector
ESW	Economic and sector work	PSR	Project Status Report, IBRD
FFT	Fuel for Thought (Bank Strategy Paper)	QAG	Quality Assurance Group
FRR	Financial Rate of Return	SAL	Structural Adjustment Loan
FY	Fiscal Year	SAR	South Asia Region
GDP	Gross Domestic Product	SECAL	Sectoral Adjustment Loan
GEF	Global Environment Facility	SSA	Sub-Saharan Africa
GHG	Greenhouse gases	TA	Technical assistance
ES	Evaluation Summary	TATF	Technical Assistance Trust Fund
IADB	Inter-American Development Bank	T&D	Transmission and Distribution
IBRD	International Bank for Reconstruction and Development	WBG	World Bank Group
ICR	Implementation Completion Report	XPSR	Expanded Project Supervision Report, OEG

Director-General, Operations Evaluation, World Bank Group Mr. Gregory Ingram		
Operations Evaluation Department, World Bank Mr. Nils Fostvedt, Director (Acting) Mr. Alain Barbu, Manager, Sector & Thematic Evaluations Mr. Fernando Manibog, Task Manager	Operations Evaluation Group, IFC Mr. William Stevenson, Director Ms. Linda Morra-Imas, Head, Special Studies and Planning Mr. Rafael Dominguez, Task Manager	Operations Evaluation Unit, MIGA Ms. Aysegul Akin-Karasapan, Director Ms. Ethel Tarazona, Senior Evaluation Officer Mr. Stephan Wegner, Task Manager

Foreword

This study evaluates the performance of the World Bank Group (WBG) during the 1990s in promoting private sector development in the electric power sector (PSDE). This joint review by the WBG's three evaluation units aims to inform the implementation of the WBG's 2001 Energy Business Renewal Strategy. It is based on an evaluation of the WBG's PSDE assistance in 80 countries, through the World Bank's analytical and advisory work and its 154 projects, 29 mature International Finance Corporation (IFC) investment operations, and 8 mature Multilateral Investment Guarantee Agency (MIGA) projects.

The report's main message is that PSDE has delivered its expected benefits and good outcomes where countries showed a commitment to advancing reforms, and PSDE programs were properly implemented. However, the quality of outcomes depended on the objectives pursued and on the types of assistance provided. Most countries remain in the early stages of reforming and deepening private sector involvement in their power sectors. The World Bank—pursuing multiple and complex reform objectives through a range of instruments across all regions—achieved good results where country ownership and sustained political commitment existed. But the World Bank underestimated the complexity and time required for reforms to mature and achieve lasting and equitable country-sector outcomes; it obtained poor or, at best, mixed results where reforms were weak or reversed. IFC and MIGA—focusing on the single reform objective of private sector participation and responding to market demand for new generation, typically to address shortages—achieved good project-level outcomes overall.

The study also points out that there is no single blueprint for sector reform and PSDE. It is an evolving menu of options covering various combinations and sequences of reform steps driven by country-specific objectives and conditions. In addition, poverty reduction and environmental mainstreaming (“doing good” in addition to “doing no harm”) have not been intrinsic components of sector reform and PSDE strategies. Independent power producers have had a critical role to play in relieving supply bottlenecks, in leveraging public sector financing capacity, and in demonstrating early wins. But lack of timely reforms in the distribution subsector can jeopardize the gains in the generation subsector.

The WBG's PSDE assistance is a “work-in-progress.” Learning-by-doing can work, but countries should set clear objectives and be in the lead, supported by sound WBG advice drawn from lessons of experience in other countries in similar circumstances. Joint World Bank-IFC-MIGA Country Assistance Strategies (CAS) have been more effective at supporting PSDE than World Bank-only CASs, but coordination through CASs alone is insufficient.

Overall, the WBG's advice and assistance in PSDE continue to be in demand given the current global environment of reduced private capital flows, heightened macroeconomic and political risks, and scant sponsor/investor interest. In particular, the WBG has an urgent and crucial role to play in slow-reforming countries and low-income countries whose high political risk and regulatory deficiencies make them less attractive to investors.

The study recommends that the WBG continue to pursue PSDE. In doing so, it should: (i) provide operational guidance to staff on when and how to continue promoting PSDE; (ii) give greater emphasis to the mainstreaming of poverty reduction and environmental objectives in the design of future PSDE strategies; and (iii) encourage operational innovations to ensure greater consistency between WBG practices and instruments and its PSDE goals, including through more systematic monitoring and evaluation of impacts.

Gregory K. Ingram,
Director-General, Operations Evaluation

Acknowledgements

This study is a joint review by the World Bank Group's three evaluation units. The report was written by Fernando Manibog from the Operations Evaluation Department (OED) of the World Bank; Rafael Dominguez from the Operations Evaluation Group (OEG) of the International Finance Corporation; and Stephan Wegner from the Operations Evaluation Unit (OEU) of the Multilateral Investment Guarantee Agency. Literature reviews, background papers, contributory Project Performance Assessment Reports, and country case studies were prepared for the OED evaluation by Yves Albouy, Simone Lawaetz, Sunil Mathrani, Manuel Penalver, and Kevin Warr. Samir Stewart and Ferdinand Vinuya contributed to the development of the OED database on the World Bank's project portfolio. Denis Long, Vanessa Poon, and Victoria Viray-Mendoza contributed to the OEG evaluation of IFC operations. Tomas Caspellan provided administrative assistance, and William Hurlbut edited the report.

Special thanks are due to the members of the advisory committee, who provided unique perspectives and advice: V.V. Desai (formerly Chief Economist and Director of Power Operations, Asian Development Bank); Navroz Dubash (World Resources Institute); Graham Thomas (independent consultant on electricity markets and restructuring); and Catherine Waddams (Centre for Competition and Regulation, University of East Anglia).

The report benefited greatly from the insights of the large number of past and present staff who were/are responsible for the World Bank Group's PSDE assistance evaluated for the study – including 154 Bank projects, 29 mature IFC investment operations, and 8 MIGA projects, in a total of 80 countries, and associated advisory work. We thank all those who kindly agreed to interviews and responded to our surveys: the Bank's Energy Sector Board and Private Sector Development Board; the Bank's Regional Energy Sector Managers; IFC's Power Department Managers; the Bank's Energy Sector Leaders, Task Team Leaders, Task Managers, and other Bank project staff, as well as IFC's Investment Officers, Environmental Specialists and Power Engineers. We would like to especially thank the peer reviewers who commented thoroughly on successive versions of the report: Mark Segal, formerly Principal Economist in IFC's Power Department; Denis Carpio from OEG; and Andres Liebenthal from OED.

We are also grateful for the support of the Norwegian Ministry of Foreign Affairs, which funded background analytical work by Håkon Nordang and by ECON of Norway, as well as the dissemination phase of the study.

We are especially thankful to the numerous stakeholders from private power investors, donor agencies, non-governmental organizations, Government officials and public power entities, who provided a diversity of insights by way of interviews and written correspondence throughout the process of preparing the portfolio review, the country case studies, the background papers, and the report.

Contents

Abbreviations and Acronyms

Foreword

Acknowledgements

Summaryv

1. Overview: Private Sector Development in the Electric Power Sector.....1

The Current Sector Environment 1

The Role of the World Bank Group in the 1990s 2

Evaluation Objective and Framework..... 3

2. PSDE Objectives and Instruments5

3. Project Results8

Bank Involvement: Reforming Power Sectors and Mainstreaming PSDE 9

IFC: Supporting Private Investments in Electric Power Generation 15

 Development Outcomes 19

 Investment Outcomes..... 21

 IFC Effectiveness 22

MIGA: Mitigating Political Risk to Private Investors 23

 Development Outcome 24

 Effectiveness..... 25

 Profitability 26

4. Sector-level PSDE Outcomes26

Promoting Private Sector Involvement 27

Macro-Fiscal Balancing: Reducing the Power Sector’s Burden on Public
Resources..... 32

Helping the Poor Directly 34

Protecting the Environment 35

5. Cross-cutting Findings37

Toward Better-Designed Interventions 37

Toward Improving WBG Processes..... 48

6. Recommendations50

Endnotes.....52

Annex 1. Methodology and Instruments 57

Annex 2. World Bank Group PSDE Portfolio-At-A-Glance..... 63

Annex 3. Trends in PSDE Objectives in the Bank’s Portfolio 64

Annex 4. Ratings of Freestanding Projects and Projects with PSDE Components..... 65

Annex 5. Analysis of the Performance of Freestanding PSDE Projects and Projects with PSDE Components.....	69
Annex 6. IFC Advisory Operations in Power: Standalone Advisory Operations	70
Annex 7. IFC Advisory Operations in Power: Donor-Assisted Technical Assistance Trust Funds (TATF) Operations	71
Annex 8. IFC’s Operations in Renewable Energy and Energy Efficiency in the 1990s	73
Annex 9. IFC Portfolio of Approvals in Power, FY1990–FY01	77
Annex 10. OEG’s Mini-XPSR Evaluation Framework for IFC’s Electric Power Sector Investment Operations	80
Annex 11. Performance Ratings of 29 IFC Mature Power Sector Investment Operations in the 1990s	82
Annex 12. Analysis of Development Outcome Indicators of the 29 Evaluated IFC Electric Power Investment Operations	83
Annex 13. MIGA Guarantees in Power, 1999–2001	86
Annex 14. World Bank Group Involvement in Renewable Energy and Energy Efficiency Projects.....	91
Annex 15. ASTAE-supported World Bank/GEF Alternative Energy Investment Projects, FY1992–2003	93
Annex 16. Technology and Policy Reform Measures in ASTAE-Supported Renewable Energy and Energy Efficiency Projects.....	94
Annex 17. Environmental and Social Impacts of IFC Investment Operations in the Power Sector	95
Annex 18. World Bank Group Management Response and Management Action Record	100
Annex 19. Chairman’s Summary: Committee on Development Effectiveness (CODE).....	108

Boxes

Box 1. Performance Management Contracts Were Mostly Unsuccessful	13
Box 2. Côte d’Ivoire Shows Good Outcomes from PSDE.....	29
Box 3. El Salvador—WBG Work in a Country Committed to Power Reforms	29
Box 4. Mauritius—The Bank’s Advice Contributed to the Success of Private Power Generation from Bagasse	41
Box 5. Ukraine—Pushing for Unbundling in the Wrong Environment.....	42

Tables

Table 1. IBRD/IDA Lending, IFC Investments, and IBRD/IDA and MIGA Guarantees in the Electric Power Sector, FY1990–2001	7
Table 2. Regional Distribution of Bank, IFC, and MIGA Operations	8
Table 3. The Bank’s PSDE Project-Level Results (Based on Achievement of Stated PSDE Objectives)	11
Table 4. Desired PSDE Outcomes Are Numerous and Complex	28
Table 5. PSDE Outcomes from Bank Activities in LAC “Advanced Reform” Countries.....	33
Table 6. Performance Improvement of South American Electricity Distribution Companies	48

Figures

Figure 1. Reform Options to Achieve Structural and Ownership Changes in the Power Sector.....	6
---	---

Figure 2. IBRD/IDA Lending for Generation Collapsed, Putting Transmission and Distribution in the Lead by FY2001 (Approvals in \$million)	10
Figure 3. The Bank's PSDE Projects Have Focused on Low- and Lower Middle-Income Countries	10
Figure 4. Countries in Each Region Taking Key Reform Steps in Power (percent).....	12
Figure 5. IFC's Investment Operations in the Electric Power Sector Peaked in the 1990s	16
Figure 6. IFC Investment Commitments in the 1990s Went Mostly to Asia and LAC.....	17
Figure 7. IFC's Electric Power Sector Operations Have Better Outcomes than the Rest of its Portfolio	19
Figure 8. Good Development Outcomes in Electric Power are Associated with Good Investment Outcomes	22
Figure 9. Cumulative Additions of New Power Production Capacity Since 1993 in Five Countries with Reforms in the Energy Sector in the 1990s	28

Summary

1. This study evaluates the performance of the World Bank Group (WBG) during the 1990s in promoting private sector development in the electric power sector (PSDE). This joint review by the WBG's three evaluation units¹ addresses four evaluation questions: (i) how have private participation and the WBG's role changed in the 1990s?; (ii) to what extent has the WBG's assistance supported its PSDE strategies?; (iii) what have been the results of the WBG's PSDE interventions?; (iv) what are the broad lessons that should guide the WBG's future business directions in promoting PSDE?

2. The WBG's experience with PSDE since the early 1990s suggests that PSDE has delivered results where it was properly implemented, and the WBG should continue to support such interventions. However, outcomes of assistance from the Bank, IFC, and MIGA depend on country commitment, objectives pursued, and types of assistance provided. There is no single blueprint for PSDE; rather, it is a continually evolving menu of options driven by country-specific objectives and conditions. Most countries remain in the early stages of reforming and deepening private sector involvement in their power sectors. The Bank, pursuing multiple and complex reform objectives through a range of instruments across all regions, achieved good results where country ownership and political commitment existed. But the Bank underestimated the complexity and time required for reforms to mature and achieve lasting and equitable country-sector outcomes; it obtained poor or, at best, mixed results where reforms were weak or slow to take root. IFC and MIGA—focusing on the single reform objective of private sector participation and responding to market demand—achieved good project-level outcomes overall. But while good, individual private sector project outcomes contribute to sector reform, they cannot, in and of themselves, ensure good sector-level outcomes. From a different perspective, good private sector project outcomes are possible at different stages of reform, but they are not a sufficient gauge of the WBG's achievement of its overall PSDE sectoral objectives. Good project-level outcomes are a necessary condition for good sector-level outcomes, but this is achievable only with strong government commitment to country-sector reform objectives. Achieving these reforms, however, has been, and continues to be, difficult in most of the WBG's client countries.

3. The WBG's advice and assistance continue to be in demand, but its role in advocating PSDE has become less clear in the current global environment of sharply reduced private capital flows. While the evaluation evidence supports the WBG's continued promotion of PSDE, some observers see a crisis in power sector reform in developing countries as strategic investors have withdrawn from the sector in droves over the past 18 months, and are concerned that the Bank's support for PSDE has become less effective. About a dozen investors have withdrawn from India, and the current economic crisis in Latin America has forced the postponement of power supplier privatizations in Peru, Ecuador, and Brazil. Observers have reported risks of renationalization in some countries. Others see the sharp drop in investor interest as temporary, noting the emergence of local and regional players, and highlighting recent transactions, such as the Delhi distribution privatization and private power deals in Kazakhstan and Central European countries. However, the WBG is most needed in low-income countries where high political risk and regulatory deficiencies deter investors. Thus, guidance is required for WBG staff on when and how to continue promoting PSDE with these heightened risks and uncertainties. Operational guidance is particularly needed in five areas: (i) how to re-ignite

¹ Comprising the following: (i) the Operations Evaluation Department (OED), which prepared the evaluation of the World Bank (IBRD/IDA) PSDE portfolio and its project- and sector-level outcomes; (ii) the Operations Evaluation Group (OEG), which evaluated the power investment portfolio of the International Finance Corporation (IFC), and prepared the sections on independent power producers (IPPs); and (iii) the Operations Evaluation Unit (OEU), which assessed the power guarantees portfolio of the Multilateral Investment Guarantee Agency (MIGA).

private interest in developing country power sectors; (ii) How to balance public and private investments; (iii) what sequence of reforms and which PSDE interventions work best in particular country-sector situations; (iv) how to incorporate the expansion of energy access for the poor and environmental considerations beyond safeguard compliance, i.e., “do good” in addition to “do no harm,” into the WBG’s PSDE and sector reform agenda; (v) how to achieve much stronger Bank, IFC, and MIGA coordination, coherence, and synergy, including within the Country Assistance Strategy (CAS) framework.

How have private participation and the WBG’s role changed in the 1990s?

4. From 1990 to the present, developing country power sectors, and the WBG’s support to them, have been transformed, moving away from public monopolies back toward private ownership and a liberalized market structure. However, rather than return to vertically integrated monopolies, market and technological innovations have widened the choices for industry structure and ownership. The main drivers for this change were the supply shortages and massive financing needs of the power sector, the persistently poor performance of public power monopolies despite decades of donor support, the wider choices in power market structures spurred by technological and market innovations in the electricity supply industry, and the growth in private capital for global power investments.

5. The Bank’s “business-as-usual” lending to public power utilities proved untenable, and in 1993 it issued an Electric Power Lending Policy, supported by IFC and MIGA. The policy linked the WBG’s support with country commitment to reforms, specifically in three areas: commercialization, corporatization, and arm’s-length regulation. IFC’s first investment with independent power producers (IPPs) was made as early as 1989, whereas it was not until 1996 that the Bank’s ‘Statement of Good Practices in the Electric Power Sector’ (GP4.45) added private sector involvement as a clear goal. By then, the Bank had adopted a *de facto* reform approach that, in addition to commercialization, corporatization, and regulation, also included unbundling, private investments in generation, private participation in transmission and distribution, and market competition. In the Bank’s operational usage, this full package of seven reform components had evolved into “steps” and a “scorecard.”

6. But while the 1993 Policy enunciated what to do, it was not accompanied by a strategy on how to do it, because of the limited experience worldwide with implementing such policies. While this shortcoming was acknowledged at the time, the Bank anticipated that the necessary experience would be obtained through “learning-by-doing.” However, this technocratic view did not give adequate weight to the *political economy* of reform and proved too optimistic: while the 1993 Policy is basically sound, the lack of accompanying strategic and operational guidance raises many questions about its implementation. Moreover, the Bank’s PSDE policy pronouncements were belated and reactive rather than at the leading edge: both the 1993 and 1996 policy statements formalized what had become a reality in the electric power sector – namely massive, global private capital flows. This trend was interrupted by the 1997-98 Asian financial crises. The Bank’s 2001 Energy Business Renewal Strategy (EBRS) was a response to poor portfolio performance in the 1990s, the decline in sector lending, and pressures to encompass poverty alleviation and environmental sustainability in its sector assistance (addressed in the 2000 “Fuel for Thought” Strategy on Energy and the Environment).

To what extent has the WBG’s assistance supported its PSDE strategies?

7. The WBG’s PSDE policies, lending, and analytical and advisory work supported the move toward private sector participation. By the end of the 1990s, power market reforms had become central to the Bank’s sector assistance, and PSDE was a major component in the portfolios of the

Bank, IFC, and MIGA. But the timing and roles of the Bank, MIGA and IFC differed. Through a diverse set of lending, technical assistance, guarantee, and advisory instruments, the *Bank* focused heavily on reforms to transform the structure and ownership of power sectors across 68 countries and all 6 regions. Following the 1993 Policy, 75-93 percent of the Bank's annual lending volume for the electric power sector supported PSDE, either as freestanding projects or as components of regular power projects (this understates the Bank's PSDE involvement, which is also present in adjustment and non-power lending). *IFC* helped promote the WBG's PSDE agenda by supporting private investments in response to urgent needs for additional generating capacity, especially in Latin America and Asia. In particular, IFC was a pioneer in financing private generation projects in the late 1980s and early 1990s, mostly in the context of foreign-sponsored IPPs. By the end of the 1990s, greenfield power generation projects comprised 82 percent of IFC's funding commitment in power. Like IFC, *MIGA* largely supported generation projects by providing political risk insurance for private power investments, with its first underwriting in the sector occurring in 1994. *MIGA* guarantees for electric power investments accelerated in the 1990s, also mainly in LAC and Asia. IFC and MIGA responded to increasing market demand for financing to private sector projects (mostly generation)—one of the seven PSDE reform components being pursued by the WBG.

8. The energy practice in the *Bank* evolved significantly during the 1990s, in line with the shift away from power generation in the Bank's portfolio, toward sector reform and adjustment, as well as transmission and distribution. While lending and operational budgets declined, the energy practice focused more intensively on private sector development (PSD); market reforms; energy for the poor (for example, in fiscal year (FY) 2002, 6 out of 7 loans directly addressed poverty reduction and PSD); energy and the environment (for example, power projects with explicit environmental objectives increased from 10 percent in 1990 to 50 percent in 2001); and related analytical and advisory (AAA) products, notably through the Energy Sector Management Assistance Program (ESMAP). Toward the end of the 1990s, an Energy Sector Board (ESB) was established to: (i) lead strategy formulation and implementation and promote cross-sectoral integration; (ii) catalyze the exchange of best practices, train staff, and mobilize learning events; and (iii) ensure portfolio quality and strategic relevance through country-sector and Quality-at-Entry reviews.

9. In practice, the Bank's approach to sector reform and its PSDE intensity went beyond what was mandated by the Policy itself. The 1993 Policy promoted commercialization/corporatization before privatization as a means to introduce innovation and competition—a reform-sequencing approach influenced by reforms in Chile, England, and Wales, which were the only experiences available for analysis at that time. But poor governance and state ownership did not provide a basis for reaching commercial standards in the power sectors of most Bank client countries. Thus, subsequent to the 1993 Policy, and without explicitly enunciating it as a major strategic change, the Bank mostly advocated privatization, as well as private participation through management contracts, as a means to achieving commercialization. This shift led to a highly reform-intensive power portfolio, which ultimately performed poorly overall during most of the 1990s (see para. 12).

10. This poor performance contributed to the branding of electric power as a “sunset sector” for the Bank (albeit not for the WBG as a whole). Priorities in CASs were also shifting away from the power sector because of: (i) increased internal transaction costs associated with power projects, in part due to the vocal opposition of international nongovernmental organizations; and (ii) the continued poor financial performance of power utilities plagued by low tariffs and collection levels, exacerbated by deteriorating macroeconomic environments, particularly in South and East Asia. Thus, while the Bank's total annual electric power lending (which includes both PSD and non-PSD directed lending) reached a peak of \$3.2 billion in FY96, it dropped precipitously to \$440 million in FY99. Power lending accounted for 15 percent of total Bank commitments in FY96, and only 1.5 percent in FY99.

11. By comparison, IFC's annual power investment approvals reached a peak of \$872 million, or 16 percent of total approvals, in FY95, but dropped to \$335 million, or 6 percent of total, by FY99. Cumulative gross approvals totaled \$4.4 billion over the 1990s compared to \$177 million before the 1990s. MIGA guarantees peaked in FY00, both in terms of the volume of coverage issued and the number of projects supported. By 2001, WBG financial commitments to the power sector were on the rise once more.

What have been the results of the WBG's PSDE interventions?

12. *What were the project-level results?* For **IFC**, the *development outcomes*, including environmental effects, of its mature investment operations in electric power outperformed its all-sector portfolio. The investment quality of IFC's electric power sector portfolio remained better than average despite its recent, slight decline along with the downtrend in IFC's overall portfolio. For **MIGA**, early indications are also positive on the performance of private power investments supported by its guarantees. In contrast, for the **Bank**, a 1999 self-evaluation singled out the power lending portfolio as one of the Bank's worst performers, although results have improved recently as a result of portfolio restructuring. OED's assessment of the results of specific PSDE components is equally sobering: 55 percent had good outcomes, 22 percent were mixed, and the rest did not achieve their objectives. These overall disappointing project-level outcomes mostly reflect low achievements of ambitious sector-level objectives (see below), except in countries with the most advanced reforms. Results of the relatively few freestanding PSDE projects were better, but this is because they were implemented in countries already focused on reforms.

13. *What have been the sector-level outcomes?* Evidence on country-sector gains from reforms and PSDE has been emerging in a few countries where ultimate outcomes have been systematically monitored. Sector efficiency improved where PSDE and reforms have advanced, as in some Latin/Central American countries and Eastern European countries seeking accession to the European Union. In these cases, shortages have been reduced, energy access has increased, service quality has improved, fiscal gains have grown, and financial subsidies have declined. But where reforms failed, stalled, or were reversed, and where PSDE did not materialize, the power sectors remain weak and continue to deteriorate operationally and financially (as in Africa and South Asia), or are facing continued political or financial risk (as in South and East Asia). Most developing countries outside the Latin America region remain at low to moderate levels in the "reform scorecard", formulated in a 1999 study financed by ESMAP. A few countries that opened the sector to IPPs in response to capacity shortages were slow or weak in reforming the transmission and distribution (T&D) subsector, resulting in an imbalance between generation and T&D. It should not be inferred from these poor sector outcomes, however, that better results would have been achieved by perpetuating the pre-1990s public monopoly model.

14. Overall, the successful implementation of reforms and PSDE have been constrained by: (i) lack of country commitment; (ii) macroeconomic and political crises; (iii) lack of experience among PSDE practitioners, particularly with political economy factors; and (iv) insufficient operational guidance to staff on the implementation of the 1993 Policy. Moreover, the Bank did not fully understand the size of the technical and financial resources required to reform power sectors, resources that few developing countries possess. Despite strong efforts by Bank staff under severe resource constraints (particularly since the late 1990s), it proved difficult to apply the 1993 Policy to seriously non-commercial power sectors. Many of the Bank's country clients are still undecided, or are considering which reform route to follow; many have stalled in their attempts at reform; while a few have reversed privatization plans. With some notable exceptions, in Latin/Central America and some Eastern European countries, the power sectors of developing countries continue to be in crisis,

particularly in terms of their finances and ability to meet demand, at least cost, on an environmentally sustainable basis.

15. Improving energy access for the poor through PSDE was overshadowed in the 1990s by the urgent and overriding need to add generation capacity in many countries. Existing customers, including low-income consumers and industries providing employment to the poor, clearly benefited from the relatively quick elimination or reduction of supply shortages. However, lagging reforms in T&D over the 1990s have constrained power delivery and made expansion of access, especially for the poor, all the more challenging. Furthermore, investment and operating costs of rural energy projects are high relative to revenue potential, making returns unattractive to private investors. Meanwhile, few private rural energy and renewable energy projects have been commercially viable or competitive with investment opportunities in the generation subsector.

16. WBG financial instruments aimed at creating physical infrastructure require projects to adhere to WBG environmental guidelines during implementation and operation. Because the WBG's environmental requirements are more stringent than local regulations in many countries, WBG projects tend to be more environmentally friendly by design. IFC power projects have a better environmental compliance record than projects in other sectors. However, according to the 2002 Environment Strategy and the OED Environment Review, the environmental "do good" (in addition to the "do no harm") agenda has yet to be fully mainstreamed in WBG operations.

17. CASs served as platforms for putting PSDE in country agendas, but were not designed to integrate sectoral strategies across the WBG. Informal discussions beyond the CAS, among task managers in different WBG units, facilitated a coordinated approach and timing of assistance. In a few cases where internal discussions were not conducted, the WBG sent conflicting signals to client countries and sponsors. Nonaligned incentive structures also led to occasional competition among the different private sector financing and guarantee instruments of the Bank, IFC, and MIGA.

What are the lessons that should guide the WBG's future business directions in promoting PSDE?

18. The main lessons learned from this evaluation are:

- The PSD-led power sector reform process is complex, time-consuming, resource-intensive, and requires phasing and good sequencing to create the conditions for sector transformation. PSD-oriented reforms are more promising than reforms confined to publicly-owned companies. There is no "one-size-fits-all" reform model and each approach should be country-specific. Although commonsensical, these lessons were not well heeded by the WBG in the past. [paragraphs 1 to 6, 5.2 to 5.5, 5.19 to 5.20, and 5.27 to 5.28]
- PSDE is a "work-in-progress." Learning-by-doing can work, but the country should set clear objectives and be in the lead, supported by sound WBG advice drawn from lessons of experience in other countries in similar circumstances. [paragraphs 13 and 14 and 5.19 to 5.37]
- The evidence on PSDE timing and sequencing is ambiguous. There are countries where "leapfrogging" to privatization has led to positive sector change, but there are others where this did not lead to sector improvements. Similarly, substantial efficiency gains were achieved in some countries where good public governance and the right tariff structures were put in place first, but there are also many situations when decades of Bank support for the incremental reform of public monopolies had little or no success. Where intermediate public sector reform steps are required, PSDE must be a clear long-term goal. [paragraphs 10 and 5.27 to 5.37]

- The evidence on the importance of country commitment is unambiguous. Country factors, such as realistic priorities, a clear road map, local champions, and early wins, drive successful reforms and good PSDE performance. Building a constituency for reforms through civil society participation is also critical to reform sustainability. [paragraphs 2 and 5.11 to 5.13]
- Poverty reduction and environmental mainstreaming (“doing good” in addition to “doing no harm”) have not, for the most part, been intrinsic components of designing sector reform strategies and promoting PSDE, thus undermining its support in local and international public opinion. [paragraphs 15 and 16, 4.22 to 4.26, and 4.28 to 4.29]
- Lack of reforms in the distribution subsector can jeopardize the potential gains of reforms in the generation subsector. [paragraphs 5.38 to 5.41]
- IPPs have a role to play in relieving supply bottlenecks efficiently and sustainably, leveraging public sector financing capacity, and demonstrating early wins. They have yielded good development outcomes under the right country, sector, and contractual conditions. However, IPPs that are not well sited and not complemented by an efficient T&D reform program can lead to an imbalance between generation and T&D capacity. In some cases they reduced pressure on country leadership and policymakers to pursue further reforms. [paragraphs 5.19 to 5.26]
- Joint Bank-IFC-MIGA CASs are more effective at supporting PSDE than Bank-only CASs, but coordination through CASs alone is insufficient. [paragraphs 17 and 5.42 to 5.45]

What are the recommendations for the WBG’s future business directions in promoting PSDE?

19. Based on its evaluation findings, the study recommends the following:

a) On an urgent basis, the WBG should provide operational guidance to WBG staff on when and how to continue promoting PSDE under the current situation of heightened macroeconomic and political risks, and scant investor interest. Such guidance should be grounded in the Bank’s recently enacted PSD strategy.

- The Bank’s Energy and Mining Sector Board, in close consultation with the Private Sector Development Board, should provide WBG staff with updated and practical operational guidance for pursuing PSDE based on what works best, in terms of reform packages and their sequencing, and given country-sector situations, needs, and institutional capacities. Best practice examples can be developed for a range of frequently observed country attributes. [paragraphs 5.2 to 5.5]
- The development of this guidance should be a joint effort between the Bank, IFC, and MIGA, and it should define a framework to fully analyze PSDE alternatives that would ensure environmental sustainability and align with the WBG’s poverty reduction mission. [paragraphs 5.5 to 5.7]
- WBG senior management should clarify the roles of the Bank, IFC, and MIGA in promoting PSDE, particularly in terms of increased financial and advisory support. [paragraphs 5.4 and 5.42 to 5.52]

b) In its future PSDE interventions, the WBG should give greater emphasis to the mainstreaming of poverty reduction and environmental objectives (in addition to its traditional macro-fiscal and sector efficiency objectives), which are at the core of the WBG's overall energy strategy.

- The WBG should put a greater focus on reforming and facilitating private investments in the distribution subsector, which will require actions to improve cash collections, reduce losses, address corruption, achieve better targeting of subsidies, expand access by the rural poor, and privatize distribution where and when circumstances permit. [paragraphs 5.38 to 5.41]
- The WBG should maximize the involvement of the local private sector in small-scale and/or decentralized projects, which will require innovative approaches and much better cross-sectoral integration within the Bank, and among the Bank, IFC, and MIGA. [paragraph 4.26]

c) The WBG should encourage operational innovations to ensure greater consistency between its practices and instruments, and its PSDE goals as they evolve.

- The WBG needs to improve the coordination of the various units active in PSDE. To this end, it should pursue better integration of its PSDE objectives within the CAS framework, including in non-joint CASs, and Poverty Reduction Strategy Papers (PRSPs). [paragraphs 5.43 to 5.45]
- The Bank, IFC, and MIGA management should support initiative and flexibility in PSDE operations and AAA, in order to better respond to rapidly changing country-sector conditions and opportunities that are not always foreseeable in the CAS. Through its diverse lending and advisory instruments, the WBG should promote more public-private partnerships and promising innovations, such as pro-poor design of reforms and output-based aid schemes, for which robust monitoring and evaluation systems are essential. [paragraph 5.42]
- The WBG should develop performance indicators and related internal systems, as well as help strengthen borrower capacities (including through project funding) to monitor and evaluate the achievements and impacts of its PSDE interventions. These monitoring and evaluation (M&E) efforts should be keyed to the Energy Business Renewal Strategy and other relevant strategy and policy objectives, especially in the relatively neglected areas of helping the poor and mainstreaming environmental sustainability. [paragraphs 5.8 to 5.10]

1. Overview: Private Sector Development in the Electric Power Sector

The Current Sector Environment

1.1 The global electric power industry experienced deep changes in its economic, political, and technological features in the last decades of the twentieth century. Those changes fundamentally altered the ownership and market structure of the sector and required the World Bank Group (WBG) to adjust its assistance in ways that supported a shift to private sector development in the electric power sector (PSDE).

1.2 Since the 1950s, the power sector had been dominated by publicly owned monopolies that covered the full range of sector activities from production to distribution. This followed the prevailing notion that large-scale technologies and their high fixed costs favored state financing, and that the monopoly stewardship by the state enhanced consumer welfare. The sector was also considered critical to national security and a tool for governments to pursue social equity objectives in their development efforts. These views prevented competition and discouraged foreign investment. From the late 1980s, however, the promise of greater efficiency from market-based competition and technological advances encouraged vertical unbundling of generation and increased private investment.

1.3 Developing countries had the same problems as developed countries with noncompetitive public sector utilities, but with the additional disadvantages of weak or nonexistent regulatory institutions, political opposition to economic pricing of electricity, the unattractive prospect of revenues in local and, often, weak currencies, poor tariff collection rates, and weak governance. Therefore, when change began to sweep developed countries, developing countries also started to reform their power sectors by dismantling the government's monopoly control of generation. However, they remained slow in liberalizing transmission and distribution (T&D) resulting in limited private investments in this subsector.

1.4 Power sector reform involves the restructuring of institutional and market frameworks, and opening the sector to private participation. Establishing both components in the same power system is a relatively recent experience in developed and developing countries, with success and failures in both. Commitment to reform is difficult to secure and sustain, as it involves politically unattractive requirements to adjust tariffs and attract foreign corporate entities. The power sector is prone to international and local corruption because the stakes are high and the opportunities for rent-seeking are plentiful. The sector transformation process and its outcomes at each stage are fragile: politics, circumstances and timing lie at the heart of reform. Much experience shows that progress and sustainability are very susceptible to the local political economy and macroeconomic shocks (Argentina, a successful reformer until recently, has fallen victim to both).

1.5 Private interest in the power sector waned following the 1997 Asian financial crisis, after growing rapidly in the early 1990s. A 2002 World Bank survey¹ revealed that private power investors are retreating from developing countries, and medium-term prospects are discouraging: of 50 firms surveyed, 52 percent are retreating, and only 3 firms continue to be interested. Interest is lowest where there is greatest need--in the distribution business. As a matter of special concern, the 50 firms are unanimous that public-private partnerships are *not* important for them, and ranked it *lowest* as a factor in investment success. These survey findings are striking, given that during the 1990s, the 15 or so major, private power investors tended to concentrate on only about 10 middle- to high-income countries. The global picture shows that while the World Bank pursues the creation of a PSDE enabling environment in 68 countries, private foreign interest itself is dwindling. Meanwhile, demand growth in developing countries is estimated to require hundreds of billions of dollars in power

infrastructure investments during the rest of this decade. Re-igniting private sector interest in developing country power sectors is a difficult task. This issue is of special importance to IFC and MIGA, which mobilize transactions with mostly foreign private partners.

1.6 The effectiveness and sustainability of PSDE depend on identifying measures that enable the power sector to manage better the aforementioned political and macroeconomic risks. The WBG's advice and assistance continue to be in demand, but its role in advocating PSDE has become less clear as a result of the sharp decline in private investor interest in emerging markets. Some observers see a crisis in power sector reform in developing countries. Other observers, however, see the sharp drop in investor interest as temporary, noting that although the "big names" are absent, or have withdrawn, local and regional players have emerged and transactions are occurring, such as Delhi distribution privatization and private power deals in Kazakhstan and Central European countries. Moreover, the decline in private investor interest is seen as less worrisome for the Bank Group, whose clients mainly consist of a large number of low-income countries with high political and regulatory risks. Nevertheless, these are precisely the countries where the WBG's PSDE engagement is most needed. More than ever, WBG staff need guidance on ways to re-ignite private interest and continue to promote PSDE under these heightened uncertainties and risks.

The Role of the World Bank Group in the 1990s

1.7 The World Bank, comprising the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA), was a major financier of electric power sectors in developing countries through their state-owned utilities during the 1960s and 1970s. In the 1980s, global pressure to address the persistently poor performance of those utilities led the Bank to start focusing its electric power lending and policy advice on promoting private sector involvement. Despite decades of Bank support for public power utilities, their financial positions continued to be desperate, institutions and governance remained weak, low technical and operational efficiencies endured, and national policies on pricing and investment planning resisted change. Meanwhile, power markets in developed countries were being transformed by lower-cost technologies, new regulatory developments, and the growth of independent power producers, which demonstrated that utilities could turn to cheaper and more efficient private power for part of their supply.

1.8 By the early 1990s, lending to public utilities had become untenable, and the World Bank Group adopted a policy to promote private sector development in the electric power sector. This was formalized in the 1993 electric power lending policy ("The World Bank's Role in the Electric Power Sector: Policies for Effective Institutional, Regulatory, and Financial Reform—A World Bank Policy Paper"), which was endorsed by the International Finance Corporation (IFC) and was also consistent with the mandates of the Multilateral Investment Guarantee Agency (MIGA). The 1993 Policy was predicated on "commitment lending," which meant that assistance would be given only when a country's institutional and structural reform policies were satisfactory. During the 1990s, lending predicated on government commitment was tested in India, traditionally a recipient of large volumes of Bank power lending. In 1993, precipitated by India's economic crisis in the early-1990s and the poor performance of the State Electricity Boards (SEBs), the Bank decided to lend only to states that agreed to unbundle their SEBs, establish an independent regulatory authority, and privatize all new generation and distribution investments. The Bank adopted a strategy of *not* lending from 1990 to 1996, which led to progress in reforming the power sector in several states. Although there has been some recent backsliding on reforms, both the Operations Evaluation Department (OED) and the Quality Assurance Group (QAG) of the World Bank concluded—at the time of OED's 2001 Country Assistance Evaluation—that the Bank's approach is a best-practice model that should be emulated throughout the Bank's power sector portfolio.

1.9 The Bank Group's PSDE policies are supported by activities in several strategic areas of emphasis: energy efficiency, rural and renewable energy, and environmental sustainability. In the 1993 "Energy Efficiency and Conservation in the Developing World," the Bank emphasizes energy pricing to improve overall energy efficiency and promote environmental protection, private sector development (PSD), and competitive markets. In the 1996 "Rural Energy and Development: Improving Energy Supplies for Two Billion People," the Bank seeks to develop new approaches for providing energy to the rural poor. Where the private sector is involved, it suggests several actions to make private companies more inclined to serve rural areas and to promote a regulatory regime that favors competition among retailers and distributors. The 2000 strategy paper "Fuel For Thought: Environmental Strategy for the Energy Sector" addresses the links between the private sector and environmentally sustainable development by stating that energy sector and pricing reforms will likely improve overall efficiency through the adoption of cleaner energy technologies.

1.10 The most recent Bank Group statement on PSDE is the "WBG's Energy Program: Poverty Alleviation, Sustainability and Selectivity" (May 2001). This Energy Business Renewal Strategy (EBRS) was prepared to address the shortcomings of the past energy program and align the energy business practice with the overall strategic framework of the WBG.

1.11 Energy practice in the Bank evolved significantly during the 1990s, in line with the shift of the Bank's portfolio away from power generation, toward sector reform and adjustment, as well as transmission and distribution. Within a smaller lending portfolio and more constrained operational budgets, the practice has had to focus more intensively on complex market reforms, climate change, energy access and poverty reduction, and related analytical and advisory (AAA) products, notably through the Energy Sector Management Assistance Program (ESMAP). By the end of the 1990s, an Energy Sector Board (ESB) was established to: (i) lead strategy formulation and implementation, based on rapidly changing internal development priorities and external trends; (ii) catalyze the exchange of best practices, train staff, and mobilize learning events, notably Energy Week; and (iii) ensure portfolio quality and strategic relevance through country-sector and Quality-at-Entry reviews. The role of the Bank's energy practice has become complex: country clients and private stakeholders have multiplied; internal and external pressures for quality and accountability have increased; and cross-sectoral integration with non-energy sectors (public sector reform, private sector development, and poverty reduction and economic management networks) with a matrix-managed Bank have become a daily operational necessity.

Evaluation Objective and Framework

1.12 **Objective.** The purpose of this study is to assess the results of the WBG's PSD-related interventions during the 1990s in the power sectors of some 80 developing and transition countries and answer four evaluation questions: (i) how have private participation and the WBG's role changed in the 1990s?; (ii) to what extent has the WBG's assistance supported its PSDE strategies?; (iii) what have been the results of the WBG's PSDE interventions?; and (iv) what are the lessons that should guide the WBG's future business directions in promoting PSDE? As WBG assistance in the power sector is still needed, particularly at a time when foreign investors are retreating from the sector, the study derives lessons from experience to inform the ongoing implementation of the EBRS.

1.13 To date, PSDE practitioners have been learning-by-doing, with the WBG having the advantage of institutional scope and memory. The continually evolving practices in PSDE make it challenging to establish convincing theories about optimal sequencing of reforms, although the catalogue of things to avoid continues to expand. Consequently, within the WBG, the PSDE practice remains a moving target, making it particularly difficult to establish evaluative benchmarks to measure results, apart from the stated objectives of the individual PSDE project and the overall PSDE program (if any) at the country level. Moreover, given the number of stakeholders and practitioners

(other than the WBG), as well as the unpredictability of reform outcomes, it is challenging to assess the extent to which WBG interventions were pivotal or decisive catalysts of reform, and to recommend how this role could be enhanced in the future.

1.14 **Framework.** OED evaluated the results of PSDE interventions in relation to the Bank Group's approach to PSDE as it evolved during the 1990s. OED's evaluation therefore focused on the performance benchmarks stemming from the objectives of the 1993 Policy. It also reviewed the Bank's experience in terms of how it can meet the objectives of the 2001 EBRS. The objectives of the 1993 Policy, its 1996 Best Practice statement, and the Bank's reform approach emphasized the commercialization and corporatization of utilities with a view to eventual privatization; an adequate legislative and regulatory framework for private sector participation; unbundling of integrated utilities into generation, transmission, and distribution; and a competitive market with private participation in greenfield projects and privatization of existing assets. The EBRS objectives include promoting PSD, macro-fiscal balancing, protecting the environment, and helping the poor directly. The evaluation framework also includes the Country Assistance Strategy (CAS) objectives because an evaluation based on individual projects alone would not capture the sector-level outcomes of power reforms. Moreover, many of the Bank Group coordination and strategic issues raised in the evaluation can only be addressed at the country level.

1.15 The EBRS objective of promoting PSD is of particular interest to this study. Its specific performance indicators comprise the creation of transparent and nondiscriminatory regulatory mechanisms; introduction and expansion of competition; divestiture of assets to strategic investors; catalyzing private investments by liberalizing entry to energy markets; strengthening the voice of consumers and communities; and strengthening local financial institutions to provide long-term financing for rural energy business.

1.16 OED derived evidence and evaluative findings from literature reviews; a review of the Bank's portfolio of 154 PSDE-related projects, based on Implementation Completion Reports, Project Status Reports, OED's Evaluation Summaries and Performance Assessment Reports, and other project documentation; country case studies of Côte d'Ivoire, Pakistan, Philippines, Poland, and Turkey, four of which were done jointly with the Operations Evaluation Group (OEG) of IFC (IFC has no power operations in Poland); analyses of other country examples with PSDE lessons of broad applicability; a survey of task managers responsible for PSDE projects;² semi-structured interviews of Bank task team leaders and energy sector managers, as well as IFC investment officers and managers; a review of six regional energy strategies; and a review of the 1990s CASs for the 5 country case studies, and 10 other countries with major PSDE programs, to assess their PSDE content, as well as to analyze the linkages between the stated PSDE priorities and the lending and economic and sector work/analytical advisory assistance (ESW/AAA) programs in each country. Comments were also received from a group of external reviewers and taken into account in the final drafting of the study.

1.17 OEG's evaluation findings are based on a synthesis of project-level evaluations covering all 29 mature IFC projects out of 57 approvals in the 1990s.³ The study draws from existing XPSR (Expanded Project Supervision Report) evaluation findings on 15 IFC operations and OEG mini-evaluations of 14 other projects using an abbreviated version of the XPSR evaluation framework. These mini-evaluations were drawn from a review of project documents, interviews with IFC project teams (investment officers, environmental specialists, economists, and technical specialists) and field visits to projects in case study countries. The IFC evaluation also draws from OEG's *Annual Review* findings.

1.18 MIGA's Operations Evaluation Unit (OEU) drew its findings from a review of MIGA's electric power portfolio. Additionally, OEU synthesized the results of evaluations of eight mature projects, selected through random and stratified sampling of active and mature operations,

representing 25 percent of all MIGA-supported projects in electric power generation during fiscal years (FY) 1994–2001.

1.19 Scope and Limitations . This study evaluates the WBG’s performance against its existing policy and strategic commitments to support PSDE. As such, this study does not include a review of the broader, underlying rationale for promoting PSD. This study focuses on the WBG’s activities in the electric power sector. It does not cover the WBG’s interventions in the electric power sector that are not directed at promoting PSD. It does not include an evaluation of the renewable energy subsector. The number of mature WBG operations in this subsector is relatively small to serve as a basis of evaluative judgments and conclusions. While originally part of the scope in the Approach Paper, this study does not include coal, oil, and gas. These energy sub-sectors are covered in the ongoing OED/OEG/OEU review of the WBG’s experience in the Extractive Industries (EI). The EI Study was conceptualized subsequent to the decision to undertake the PSDE study. The study period is from FY1990-1999. As appropriate, the study provides observations on the WBG’s PSDE activities in FY2000-2001. Performance and outcome ratings are based on the respective evaluation criteria of the Bank, IFC, and MIGA. The study does not duplicate the analysis of the Bank’s and IFC’s respective Annual Reviews of Portfolio Performance and Evaluation Findings , but builds on their data and findings. Given the large size of the Bank’s analytical and advisory assistance (AAA) and the serious data inadequacies on AAA performance, the in-depth review of PSDE-related AAA operations was limited to country studies using generally accepted AAA criteria. The study does not include an evaluation of IFC’s advisory operations and electric power components of non-power sector projects due to insufficient data. Since few countries are at the advanced stages of power reforms, this study emphasizes the assessment of the PSDE promotion process; it assesses outcomes and impacts to the extent made possible by available literature, project evaluations, and limited country studies. Details on the methodology and tools used in the study are provided in Annex 1.

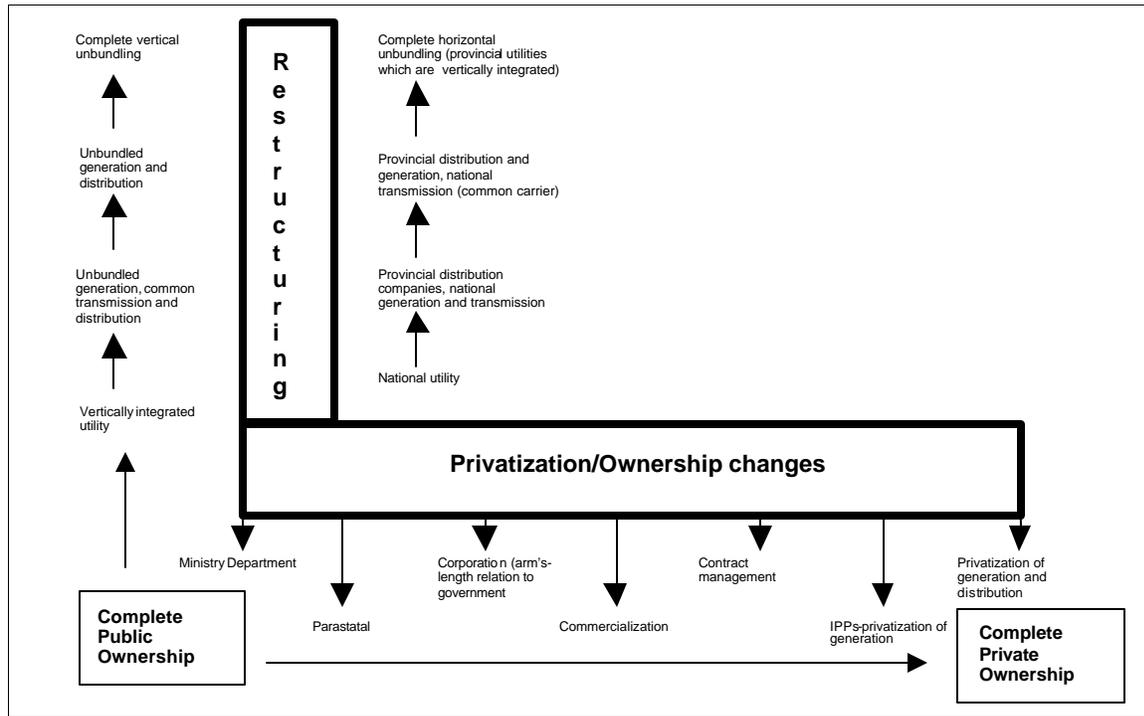
2. PSDE Objectives and Instruments

2.1 The power sector reforms that swept developed and some developing countries in the 1990s can be presented graphically by focusing on the degree to which they attempted to change the competitive structure of different segments in the industry, and on the changes in the ownership—from public to private (Figure 1).⁴

2.2 Although in practice, some of the possible changes were chosen from a “menu of objectives,” the literature and Bank Group practice gradually evolved into a combination of **seven PSDE reform areas**: (i) commercialization; (ii) corporatization; (iii) arm’s-length regulation; (iv) unbundling; (v) private participation in production (greenfield and divestiture); (vi) private participation in transmission and distribution (greenfield and divestiture); and (vii) building competitive markets in production, transmission, and distribution—not necessarily in that order.

2.3 The relative mix of restructuring and privatization adopted depended on the country’s political choices, but also evolved throughout the 1990s. One approach was to maintain the state-owned monopoly structure, but invite independent power producers (IPPs) to construct new power plants and sell their electricity to the public monopoly as a single buyer (Indonesia, Pakistan, and the Philippines), usually on the basis of a long-term Power Purchase Agreement (PPA). A second approach was to promote private ownership of a vertically integrated generation, transmission, and distribution system (IFC advisory work in Cameroon, in conjunction with Bank lending). A third approach was to unbundle the state monopoly and privatize the separate entities, while establishing a regulatory body to oversee both the competitive and the uncompetitive segments of the restructured power industry (Chile, Peru, Ukraine). Regardless of the path, the underlying objective was to minimize or eliminate the sector’s fiscal drain, as well as improve supply efficiencies, access, quality of service, and the financial performance of utilities.

Figure 1. Reform Options to Achieve Structural and Ownership Changes in the Power Sector



2.4 The Bank, IFC, and MIGA played different roles in helping countries along the two axes and achieved different results. Specialization between the three gradually evolved on PSDE (and PSD in general), and was only formally specified in the PSD Strategy⁵ in 2002. The Bank is now expected to concentrate on the legal and regulatory framework, thus improving the enabling environment for PSDE, and, where needed, on helping improve the performance of remaining public components of the sector. IFC is expected to assist the process by helping to finance new private sector investments, and by helping government institutions with the privatization process itself.⁶ MIGA's role is to assist foreign investors by providing coverage against political risks. During the 1990s, the roles of the Bank and IFC occasionally overlapped.

2.5 The WBG also used a variety of instruments to help countries pursue their PSDE objectives. Most were financial instruments (loans from the Bank and IFC, equity investments by IFC, guarantees by the Bank and MIGA), but analytical work by the Bank and advisory services by IFC also were important. Bank lending was not only for investment, but also for technical assistance and in components of adjustment loans.

2.6 World Bank lending to the power sector was high through most of the 1990s, but dropped sharply after 1998, following the East Asia crisis and the sudden halt in capital flows to emerging markets. The pattern of IFC investments is similar; MIGA guarantees expanded rapidly and seem to have maintained the same pace. The Bank's electric power lending reached a peak of \$3.2 billion in FY96, but dropped to \$440 million in FY99 before rebounding to \$994 million in FY00 (see Table 1). Power accounted for 15 percent of total Bank commitments in FY96, and only 1.5 percent in FY99. By comparison, IFC's power investment approvals also reached a peak of \$872 million in FY95 and had declined to about 40 percent of that level by FY99, but the cumulative gross approvals of \$4.4 billion over the 1990s reflects tremendous growth compared to the low level of \$45 million in FY90. MIGA guarantees peaked in FY00 (both in the volume of coverage issued and the number of projects supported); in that year, power projects accounted for a record 40 percent of MIGA's gross liability

issued, whereas in the second half of the 1990s that figure oscillated around 15 percent. At the same time, the average size of MIGA projects and their complexity also increased.

Table 1. IBRD/IDA Lending, IFC Investments, and IBRD/IDA and MIGA Guarantees in the Electric Power Sector, FY1990–2001

	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01
IBRD/IDA lending:*												
Number of Projects	16	10	25	19	10	16	20	17	15	6	9	9
Approvals (US\$ millions)	2,968	1,707	3,554	2,739	1,613	2,242	3,247	1,889	2,067	440	994	824
Bank Power Project Lending as % of total commitments,	14.34	7.52	16.37	11.56	7.74	9.95	15.21	9.87	7.23	1.52	6.51	4.78
PSDE Related (US\$ millions), of which:	875	735	456	1,672	1,457	1,919	2,468	1,638	1,409	349	750	766
Freestanding	98	195	127.5	1.2	230	411	329.4	184	0	0	0	0
Components (Only power sector)	777	540	328	1,671	1,227	1,508	2,139	1,454	1,409	349	750	766
PSDE Related as a % of Electric Power Lending	29.5	43.1	12.8	61.0	90.3	85.6	76	86.7	68.2	79.4	75.4	92.9
IBRD/IDA guarantees:												
Number of Operations	0	0	0	0	1	3	2	0	1	2	0	1
Value (US\$ millions)	0	0	0	0	57	404	125	0	10	330	0	61
IFC investments:												
Number of Approved Investments	2	2	1	7	8	9	6	8	8	6	11	8
Value of Gross Approvals (US\$ millions)	45	107	97	512	676	872	623	518	584	335	632	687
IFC Power Approvals as % of IFC total approvals	2.0	3.8	3.0	13.0	15.8	16.0	7.7	7.7	9.9	6.3	10.8	12.8
MIGA guarantees:												
Number of Projects Guaranteed	0	0	0	0	1	3	5	7	6	5	8	4
Maximum Aggregate Liability (US\$ millions)	0	0	0	0	15	137	132	94	132	161	638	394

*Includes only projects in the electric power sector group. Most of the projects include PSDE components; 16 are stand-alone PSDE projects.

Sources: IBRD/IDA Lending—Business Warehouse; IBRD/IDA Guarantees—Project Finance and Guarantee Group; IFC Investments—International Finance Corporation; MIGA Guarantees—Multilateral Investment Guarantee Agency

2.7 Bank and IFC lending approvals, as well as Bank and MIGA guarantees have to be seen in the context of the huge (and unanticipated) increase in private capital flows to developing countries between 1990 and 1997. Similarly, the drying up of those flows—and of new private investment—in developing countries following the 1997 East Asia crisis affected WBG activities. For example, while IFC approvals remained relatively strong, except in 1999, its funding commitments slowed down. Finally, the geographical differences in the Bank Group's PSDE assistance are also partly explained by the concentration of private capital flows in Latin America and Asia (both East and South).

2.8 The level of support for PSDE from other multilateral development banks is small compared to the WBG, based on a comparison of their overall lending programs, their electric power sector portfolios, and their PSDE components (if known). Since 1994, the European Bank for Reconstruction and Development (EBRD) supported 10 projects in power and energy, of which 2 are equity investments, totaling \$230.8 million. The Asian Development Bank (ADB) approved 40 loans in the energy sector between 1995–99, representing 11 percent of ADB loans, but there is no data on how much of this lending is specific to PSDE. Over 50 percent of the *active* projects of the Inter-

American Development Bank (IADB) are in the energy sector, and 47 percent of the infrastructure portfolio of IADB's Inter-American Investment Corporation is in the power sector, but PSDE-specific data is likewise unavailable. IADB's grant-making Multilateral Investment Fund supports the establishment of regulatory mechanisms to encourage private participation, some of which is geared toward PSDE.

3. Project Results

3.1 The WBG supported PSDE through interventions in 80 countries, through different combinations of WBG institutions and instruments. The Bank pursued power sector reforms (mainly through components in larger projects); IFC and MIGA facilitated private power investments.

3.2 OED's review of the Bank's PSDE portfolio shows that: (i) project objectives are consistent with the 7 PSDE reform areas that evolved in the Bank's energy practice during the 1990s (paragraph 2.2); and (ii) the level of financial support varied widely, ranging from small technical assistance components to large energy Sector Adjustment Loans (SECALs). World Bank-defined regions include Africa (AFR), East Asia and Pacific (EAP), Europe and Central Asia (ECA), Latin America and Caribbean (LAC), Middle East and North Africa (MNA), as well as South Asia (SAR). Along these regional lines, in AFR, ECA, and MNA, the Bank predominated and IFC and MIGA had little presence, while in EAP, LAC, and SAR, the Bank, IFC, and MIGA were all involved (Table 2). Close to 40 percent of IFC's operations are in LAC and SAR alone. IFC's involvement in the power sector has focused mainly on financing independent power producers (IPPs) in the 1990s, in accord with one of the 7 PSDE reform areas.

Table 2. Regional Distribution of Bank, IFC, and MIGA Operations

Region	Bank	% share	IFC	% share	MIGA	% share
Africa (AFR)	30	20	3	5	2	5
East Asia and Pacific (EAP)	35	23	6	9	9	23
Europe and Central Asia (ECA)	39	25	7	11	2	5
Latin America/Caribbean (LAC)	25	16	22	34	20	51
Middle East/N. Africa (MNA)	5	3	2	3	0	0
South Asia (SAR)	20	13	16	25	6	15
World			8	13		
Total Projects*	154		64		39	
Total Countries	68		29		25	
Total Countries in WBG: 80						

* The Bank column of 154 investment and adjustment operations includes 138 PSDE components in non-energy sectors, for which the Implementation Completion Reports, Evaluation Summaries, Performance Audit Reports, and Project Status Reports were all reviewed. The IFC column includes 57 investment operations (29 of which are mature and have been evaluated) and 7 Global Environment Facility (GEF) projects (none of which has been evaluated).

3.3 As discussed below, *project-level results* (i.e., individual transactions) have been good overall for IFC and MIGA, but only mixed in Bank projects. *Sector-level outcomes* have been mixed overall, as discussed in the next chapter. Since IFC and MIGA are transaction oriented vis-à-vis the WBG's wider reform agenda, this chapter focuses on their performance based on a synthesis of their respective project-level outcomes and indicators. In pursuing the WBG's PSDE agenda, both IFC and MIGA concentrated on supporting private participation in the generation subsector, and to a lesser extent, in the T&D subsector. Private participation in these two subsectors is an integral part of the reform agenda supported by the WBG. The Bank, for its part, mostly pursued sector-wide reforms through diverse and multisectoral lending, and AAA instruments (see Annex 2 on the "WBG's PSDE Portfolio At-A-Glance").

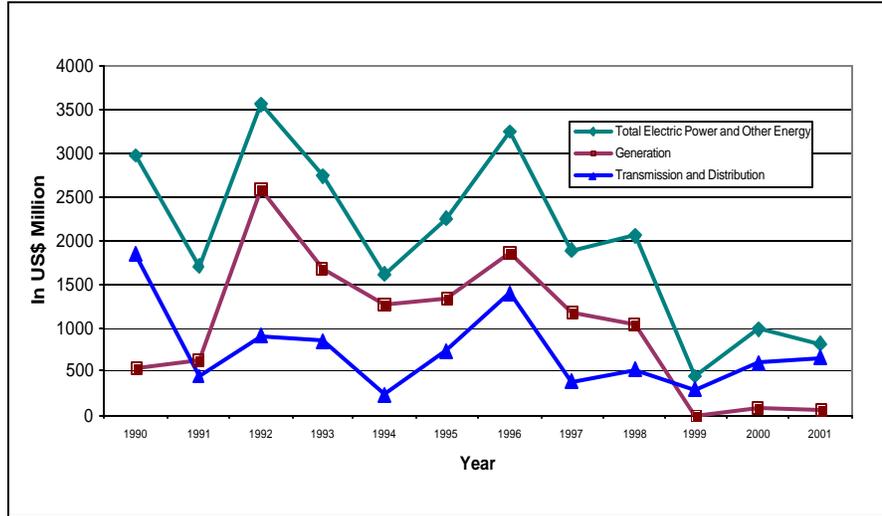
Bank Involvement: Reforming Power Sectors and Mainstreaming PSDE

3.4 *The Bank mainstreamed PSDE, as its traditional power lending sharply declined.* The shifts in the Bank's reform portfolio during the 1990s also show a positive response to the 1993 Policy and its 1996 Best Practice statement. The Bank increasingly supported PSD and private participation in its power *and* non-power lending. While power lending volumes dropped, the number of projects with PSDE components grew from 7 in 1990 to 18 annually after 1994, indicating the mainstreaming of PSDE objectives into nearly all power projects, as well as adjustment and non-electric power projects (notably in public enterprise reform) and partial risk guarantees. Within the power sector alone, the lending volume of projects that pursued reforms and PSDE accounted for 75 to over 90 percent of electric power project approvals during the period following the 1993 Policy (Table 1). As the number of country clients increased and PSD instruments became more diverse, the following PSDE trends can be observed, based on OED's portfolio review (Annex 3):

- The Bank's support for corporatization increased in the early 1990s and has remained relatively stable. Commercialization peaked in the mid-1990s, and tapered back to 1990 levels.
- From modest efforts in 1990, the Bank's current agenda has evolved to an emphasis on (i) arm's-length regulation, now the most frequent project objective, and (ii) private participation in transmission and distribution.
- The building of competitive markets has shown a consistent increase since 1996.
- The Bank's work on private participation in production and unbundling has experienced wide swings, and appears to be tapering off.

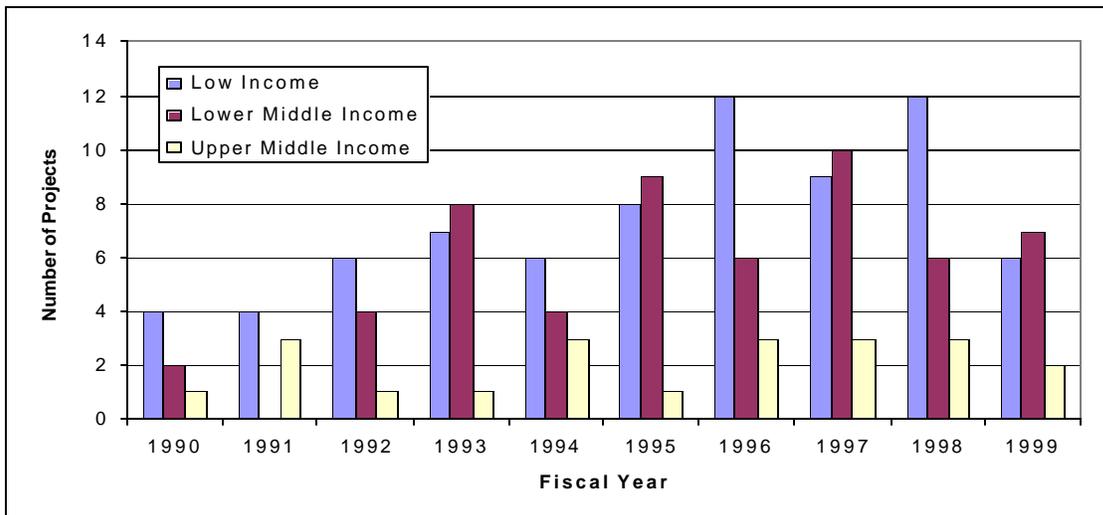
3.5 *Bank lending for transmission and distribution has overtaken generation expansion.* The Bank's lending for expansion of generation capacity has dropped from a peak of \$2.6 billion in 1992 to almost nothing in 2002 (Figure 2). It has now been overtaken by lending for transmission and distribution, where much still remains to be done given the pivotal role of improvements in the distribution subsector to the success of overall reforms, as will be discussed in Chapter 4. Of the 154 Bank projects that supported PSDE, 63 projects (40 percent) also supported transmission and distribution. Most of the projects were approved in the early to mid-1990s, and in the EAP, AFR, SAR, and ECA regions (there were few distribution projects in LAC and MNA). Almost half of the projects supporting T&D did not perform well. Of the 38 closed projects, OED rated the outcome of 17 projects (45 percent) as unsatisfactory or marginally unsatisfactory, mainly due to persistent high losses and inability to improve revenue collection, lack of adequate tariff adjustments, and/or weak institutional capacities. The sustainability of 42 percent of these closed projects was rated as uncertain (18 percent) or unlikely (24 percent); 7 out of the 9 AFR projects were rated as having unlikely or uncertain sustainability. Of the 25 active projects, 3 are reported as unsatisfactory in terms of achieving their development objectives, due to lack of government commitment and implementation delays, in addition to the foregoing reasons.

Figure 2. IBRD/IDA Lending for Generation Collapsed, Putting Transmission and Distribution in the Lead by FY2001 (Approvals in \$million)



3.6 *The Bank’s PSDE support has focused largely on low- and lower middle-income countries.* While the Bank remained a relatively small player in global PSDE financing, its assistance has emphasized under-served low- and lower middle-income countries. The Bank supports PSDE in a large number of mostly low-income countries. OED’s portfolio review shows that most of the Bank’s PSDE-related projects were approved for low-income countries, while there were fewer approvals for upper-middle-income countries (Figure 3).

Figure 3. The Bank’s PSDE Projects Have Focused on Low- and Lower Middle -Income Countries



3.7 *Results of the Bank’s reform-intensive PSDE projects are positive in only 55 percent of cases and mixed in 22 percent.* Only 16 of the 154 projects in the Bank’s PSDE portfolio are freestanding, and 13 of those have an outcome rating of satisfactory;⁷ 138 projects (90 percent of the portfolio) have PSDE components for which there are no independent ratings. (For reference, the ratings for all these projects are provided in Annex 4.) In a review of the latest Project Status Reports (active projects) and the Evaluation Summaries or Implementation Completion Reports (closed projects) across the PSDE

portfolio, OED found that about 55 percent of projects have “achieved” their stated PSDE objective(s); 22 percent “partly achieved” anticipated results; and projects with “not achieved” or unclear results are 16 percent and 8 percent, respectively (Table 3). The LAC and ECA regions record the highest number of PSDE-related projects that achieved (or are achieving) their objectives, such as the passing of reform legislation, strengthening of regulatory capacities, tariff adjustments, and unbundling. For PSDE components alone, this finding is more positive than the 1999 portfolio review, which showed, based on aggregate portfolio data, that the energy sector—including power, and oil and gas—was one of the worst performing in the Bank, although this has improved recently through portfolio restructuring. In sum, based on inputs and outputs at the project level, the Bank appears to be only half-successful in pursuing the discrete objectives of its reform agenda.

3.8 Do freestanding PSDE projects perform better than projects with PSDE components? A review of the Bank’s PSDE portfolio suggests that satisfactory (or unsatisfactory) outcomes are not associated with being “freestanding” or a “component” (see Annex 5). These outcomes are also not fully explained by type of instrument, regional concentration, or heavy Bank inputs of ESW/AAA. Good PSDE outcomes are driven mainly by country factors. These include country commitment, broad-based ownership, strong local champions, a clear road map, and early wins. The relevance and timing of the Bank’s interventions, and its ability to effectively navigate the local political economy, are important supporting factors. In promoting PSDE, the Bank should give more attention to building country ownership and the buy-in of stakeholders; it should sustain early successes at reform with well-timed, relevant ESW/AAA to help chart reform steps, and appropriately tailored lending instruments. This will require the Bank to improve its ability to work with local champions for reform and to understand the country’s political economy context.

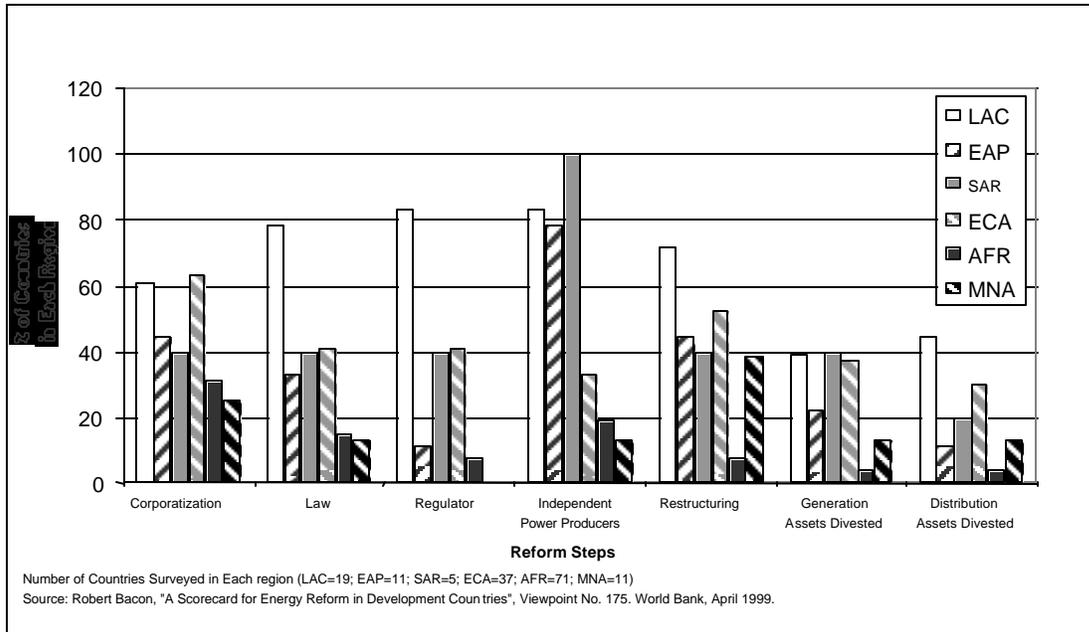
Table 3. The Bank’s PSDE Project-Level Results (Based on Achievement of Stated PSDE Objectives)

<i>Region</i>	<i>Status</i>	<i>Achieved</i>	<i>Partly Achieved</i>	<i>Not Achieved</i>	<i>Unclear</i>	<i>Subtotal No. of Projects</i>	<i>“Achieved” as % of No. of Projects</i>
AFR	Active	8	2	6	1	29	38
	Closed	3	6	3	0		
	Subtotal	11	8	9	1		
EAP	Active	11	4	2	2	35	60
	Closed	10	5	1	0		
	Subtotal	21	9	3	2		
ECA	Active	10	3	0	2	39	67
	Closed	17	5	3	0		
	Subtotal	26	8	3	2		
LAC	Active	8	0	0	1	25	68
	Closed	9	4	2	1		
	Subtotal	17	4	2	2		
MNA	Active	0	1	1	1	5	20
	Closed	1	1	0	0		
	Subtotal	1	2	1	1		
SAR	Active	4	1	1	3	20	35
	Closed	3	2	5	1		
	Subtotal	7	3	6	4		
Total Results	Active	41	11	10	10	154	55
	Closed	43	23	14	2		
	Total	84	34	24	12		

Based on PSRs as of March 2002 for active projects and OED Evaluation Summaries and Implementation Completion Reports (ICRs) for closed projects

3.9 **Countries and regions vary widely on their reform status.** In assessing PSDE outcomes, a key question is where developing countries stand on power reforms. One such effort is an independent assessment of reform achievements that was prepared in 1999 by the Bank’s Energy Sector Management Assistance Program (ESMAP) for a total of 115 countries (Global Energy Sector Reform in Developing Countries: A Scorecard—hereafter called “The Scorecard”).⁸ The Scorecard indicates each country’s overall reform status and, not necessarily, the impacts directly attributable to the WBG. Indeed, as in many LAC countries, the WBG often became involved only later and facilitated reforms that the countries had already initiated. Without implying causality, however, countries with WBG involvement tend to be associated with higher scores for reform in the Scorecard, while countries without WBG involvement tend to also have low reform scores. IFC, for example, considers engaging only when a country has opened its power sector to private involvement, and does not come in to specifically launch reforms. This also explains why the WBG is most present in LAC, which has been most active in all the reform areas (Figure 4).

Figure 4. Countries in Each Region Taking Key Reform Steps in Power (percent)



3.10 Based on stated PSDE objectives in project documents, as well as most recently available regional energy strategies, the following section discusses the degree of reforms pursued in each of the Bank’s regions. AFR, ECA, and MNA represent the “basic” reform group of countries, and EAP, LAC, and SAR—the “intermediate” and “advanced” reform group. AFR, EAP, and ECA have the heaviest emphasis on commercialization. As seen from Figure 4, LAC and ECA emphasized corporatization. By a large degree, LAC’s reforms had the strongest legal and regulatory focus compared to the other regions. LAC, EAP, and SAR involved the most IPPs, with the other three regions falling relatively far behind. LAC also led in power industry restructuring and asset divestiture. SAR’s PSDE reform agenda is the most evenly distributed across all the reform areas, with India alone accounting for more than half of the PSDE-related actions, when tabulated at the project level. ECA had the most PSDE-related projects, followed by EAP. In AFR, many countries have only one project with a small PSDE component. While LAC and SAR have relatively lower numbers (25 and 20 projects, respectively, out of the 154 reviewed), this may be misleading, since these lending operations were reform-intensive, and these are the regions where the Bank, IFC, and MIGA were all present.

(i) *Regions with Mostly Bank Involvement Only*
(AFR, MNA, ECA)

<i>Region</i>	<i>Overall PSDE Status</i>
AFR	PSDE achievements are few, recent and at risk.
MNA	PSDE efforts are just being initiated.
ECA	PSDE progress has shown mixed results and sustainability is uncertain.
LAC	Most advanced in PSDE, power sector transformations have been most profound.
EAP	PSDE progress is threatened by financial and political risks.
SAR	Innovative and intensive PSDE reforms are at risk of backsliding.

3.11 In **AFR**, the Bank pursued mainly basic reforms (commercialization and corporatization, and some regulatory improvements) and promoted Performance Management Contracts, most of which did not work well (see Box 1). PSDE achievements are few, and the challenges remain considerable. Most AFR countries have low access to electricity, lack financial resources for system expansion, and have inefficient management, often resulting in

substantial losses to government budgets. OED's portfolio review shows that the positive outcomes were only achieved late in the 1990s.⁹ For these few countries,¹⁰ macro-economic instability, serious delays, or partial and unbalanced reforms have put the PSDE gains at risk. In others, the PSDE-related achievements have been cancelled out by negative project outcomes.¹¹ Adjustment operations have not been effective vehicles for PSDE reform. Finally, in some countries¹² the results of Bank interventions remain to be seen, or are clearly unsatisfactory.

Box 1. Performance Management Contracts Were Mostly Unsuccessful

In line with the 1993 Policy, many Sub-Saharan African countries used Performance Management Contracts with Bank support, but with disappointing results. There have been eight management contracts in the AFR region (Benin, Congo DR, Ghana, Mali, Rwanda, Sierra Leone, and Zimbabwe). The performance-related components in these contracts were so small that service providers took little risk. The partial management contract for Ghana (billing and collection only) was the only one that produced positive results, but they were not sustainable. The experience in Bolivia shows that the Bank's initial support for performance contracts failed to improve efficiency, as they did not systematically address the structural problems of the enterprises. In Laos, the performance contract between the Laotian Finance Ministry and Electricité du Laos failed to eliminate receivables from government agencies. The major difficulty with management contracts lies in demarcating responsibilities between owner and manager, and the need for full support of owners and workers for the arrangement. The main lessons are the need for the operator's financial stake in the operation of the utility, the autonomy of the operator, and the government's commitment to the reforms.

3.12 The clear exception in AFR is Côte d'Ivoire, where the Bank played a catalytic role in the government's bold decision, in the mid-1990s, to call in a private operator to take over management of the power sector and in expanding private sector participation in electric power generation. The Bank facilitated the most important reform in the sector, i.e., the creation of the privately owned utility CIE (Compagnie Ivoirienne d'Electricité). By mid-1990, when the release of the second tranche of the ESAL was due, the Bank informed the government that no financial restructuring of the power sector could succeed without a change in management and recommended that EECI (the public utility) be placed under financial trusteeship to implement major reforms. The clear signal from the Bank that there would be no tranche release without convincing measures led to the government's bold decision to call in a private operator to take over management of the power sector. The Bank was kept informed, though not directly involved, in the details of the design of the new institutional and financial arrangements, and did not review the Memorandum of Understanding before it was signed. The contract with CIE runs until 2005 and effectively narrows the range of PSDE objectives that could be pursued. Nonetheless, the Bank continued an intensive and sustained policy dialogue with the government, has supported a major study of the institutional arrangements for the power sector, and has advised heavily on key decisions for a new sector setup (see also Box 2, p. 29).

3.13 In **MNA**, the WBG presence was limited in terms of direct lending during the 1990s, and most countries have initiated power sector reforms only in the last two years. The region still has a

long way to go, in particular with respect to creating investment climates conducive to private sector investment. The Bank's role in promoting these changes has been mainly to sponsor or supervise preparatory studies for reforms and private sector participation funded by other donors or trust funds. Further restructuring studies are in various stages of completion or are beginning to be implemented (Morocco, Lebanon, Yemen, Tunisia). Beyond studies, Jordan, Algeria and Lebanon have adopted new electricity laws which provide for corporatization and the establishment of a regulatory body. Egypt has created a holding company with corporate subsidiaries and has established a regulatory agency. Four countries have private IPPs in operation (Egypt, Morocco, West Bank Gaza and Tunisia). Jordan, which has had a locally privately owned, integrated distribution company for many years, has fully unbundled its generation, transmission and distribution sectors and is preparing to privatize the other entities as well. In Morocco, about 50% of distribution is operated through private concessions.

3.14 In **ECA**, overall, PSDE progress has shown mixed results, with about half of ECA countries meeting reform targets, while the rest have either failed in implementing reforms, are just initiating them after conflict (Southeast Europe), or are still undecided as to what reforms to carry out (Belarus and some Central Asian countries). Central European and Baltic countries saw profound changes in the structure, regulation, and ownership of their power sectors during the 1990s, often tied to larger shifts toward competition with the expectation of interconnecting with European electricity markets for wholesale trading. This contrasts with countries belonging to the post-Soviet Commonwealth of Independent States (CIS), where weak institutional capacity has constrained the setting of effective and independent regulation.¹³ Yet some other countries have lagged behind as a result of war and civil unrest and the attendant destruction of physical facilities and deterioration of institutional capabilities.¹⁴ Recently, plans for accession to the European Union (EU) have provided an added impetus to accelerating sector reforms in some countries.¹⁵ Those aiming for EU accession show stronger regulatory performance, improved tariff setting, and openness to market competition.

3.15 The Bank supported the most ambitious PSDE reforms in Armenia, Hungary, Poland, and Romania, which have proceeded in unbundling, establishing a functioning arm's-length regulatory system, introducing private sector participation, and improving sector financial performance. Poland (which received extensive analytical and advisory support from ESMAP) provides a good model for an effective approach to PSDE: first reforming energy prices and establishing an appropriate regulatory framework, then restructuring the industry, and finally privatizing. In Poland, however, the functioning of a competitive market via a newly created spot market has been hampered by the dominance of long-term Power Purchase Agreements. Contrary to Bank advice, these PPAs were entered into with the transmission company to finance modernization of power plants. In Hungary, private investment was sought strongly as the driving force for modernization. With Bank assistance, the country has privatized all of its generation and transmission companies.

(ii) Regions with Bank, IFC, and MIGA Involvement (LAC, EAP, SAR)

3.16 The LAC, EAP, and SAR regions show a more complex picture of PSDE progress, and of WBG involvement throughout the 1990s. Major differences include greater progress toward private sector participation and investment in the power sector; higher volumes of private capital flows (at least until the 1997 financial crisis); and broader involvement of Bank, IFC, and MIGA through a variety of instruments (lending, partial risk guarantees, political risk guarantees, IFC investments, B loans).

3.17 Power sector transformations have been most profound in **LAC**. While problems remain in many of the region's countries, particularly in the current difficult external environment, the reforms have progressed beyond the point of no return, and sustainability is more likely.

3.18 Apart from the well-known successes of Argentina (at least until the successful, Bank-supported PSDE experience was jeopardized by the current political and economic crises),¹⁶ Brazil,¹⁷ and Chile, achievements in most other LAC countries—Bolivia, Colombia, El Salvador, Guatemala, Panama, and Peru—are also well advanced. Achievements related to Bank-financed projects include strengthened PSDE-related legislation¹⁸ and regulatory regimes,¹⁹ unbundling,²⁰ private sector participation,²¹ and the building of competitive markets.²² Private participation in power has increased significantly; in Colombia, it has risen to 56 percent in generation in 2001 compared to 25 percent in 1996, and in Guatemala, 60 percent of installed capacity and 90 percent of distribution is private. As sector reforms deepen, sector performance continues to improve in Bolivia, Panama, and Peru. Consistent increases in electricity tariffs and improvements in billing collections have strengthened the financial performance of the sector. Significant progress has been made in developing competitive power markets. Some countries with small power markets (Bolivia) opted for competition in generation, breaking with the conventional wisdom that its market was too small.

3.19 In **EAP**, PSDE progress is threatened by financial crisis and political risks. EAP has had heavy WBG involvement, particularly by the Bank, which covered the entire range of PSDE objectives and reform steps for most EAP countries. The WBG's support for PSDE in EAP was successful in laying the foundations for power sector restructuring, unbundling power companies, and promoting private ownership, mainly through IPPs. By 1997, EAP had the largest private power investments globally, valued at \$50 billion and concentrated in five countries (China, Indonesia, Malaysia, Philippines, and Thailand). The Asian financial crisis, however, had a huge impact on the sector. Actual demand for electricity fell below official projections. IPPs were under-utilized and dispatched below optimum levels, leading governments to ask IPPs to share the burden of depressed demand through reduction of contractually agreed fees. Moving to a multi-buyer market structure remains a major task given that the process is complex and takes time. At this juncture, market structure (particularly regarding the role of competition) remains a major issue in the region, as the reform agenda is highly politicized and has been slowed by continuing strong opposition from entrenched interest groups.

3.20 In **SAR**, innovative and intensive PSDE reforms are at risk of backsliding. All countries (except Bhutan and the Maldives) have moved to encourage all areas of sector reforms and private participation. Achievements up to 1999, however, fall short of the objectives. The Bank's involvement has been most extensive in India and Pakistan, where it supported eight PSDE-related projects in each country throughout the 1990s. The Bank supported on-lending mechanisms for promoting private power in Bangladesh, Pakistan, and Sri Lanka. In Bangladesh, this has recently been used to finance a private power plant. In Pakistan, the Energy Fund was used to finance one very large transaction—the 1,292-MW Hub Power subproject, among others.²³ While Pakistan created institutional capacity to approve IPPs, its public utility (WAPDA) did not develop the institutional capacity to manage its new commercial contracts. With Bank support, the government established the criteria for private participation in generation and readily approved IPP proposals that met the criteria. This resulted in an unbalanced demand/supply situation. Because of poor T&D infrastructure and/or plant location, some IPPs are running below optimal levels. Meanwhile, some parts of the country continue to experience rolling blackouts and less than 50 percent of the population has access to electricity. This imbalance puts a severe financial strain on WAPDA's resources. In SAR (as in EAP), the large role given to IPPs has allowed for increased supply, but deep-seated sectoral problems (such as weak institutional capacity and lagging T&D reforms) continue to be a burden and could dilute the gains achieved by the reforms to date.

IFC: Supporting Private Investments in Electric Power Generation

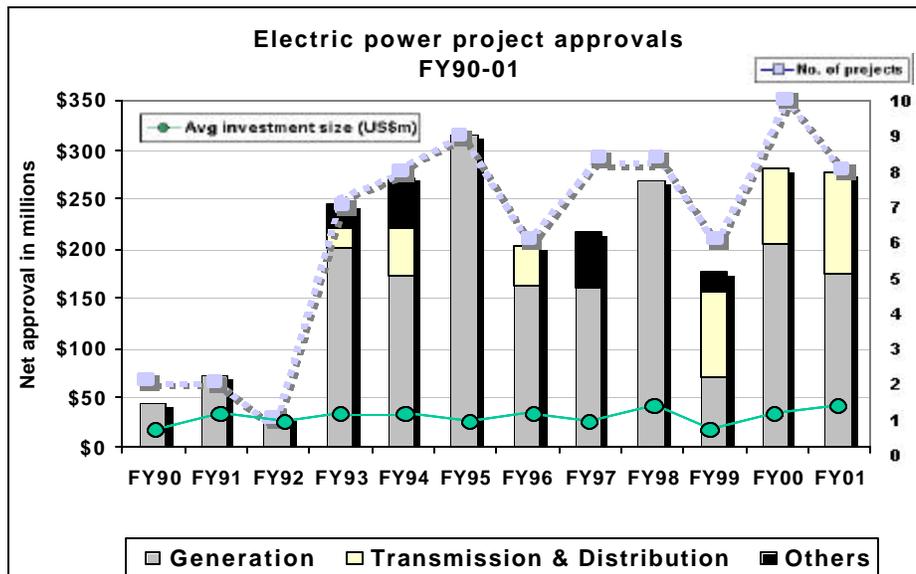
3.21 IFC's power sector strategy in the 1990s was anchored on four themes: (a) financing financially, economically, and environmentally viable independent power producers (IPPs) and newly

privatized and existing generation, transmission, and distribution companies; (b) providing advisory services for the privatization of generation, transmission, and distribution companies; (c) developing and implementing financing structures that help extend opportunities for privatization and private investments; and (d) on its own and in partnership with the Global Environment Facility (GEF), pursuing renewable energy and energy efficiency initiatives. Over the 1990s, IFC’s power sector operations have become an important component of the WBG’s PSDE financing. These operations have included:

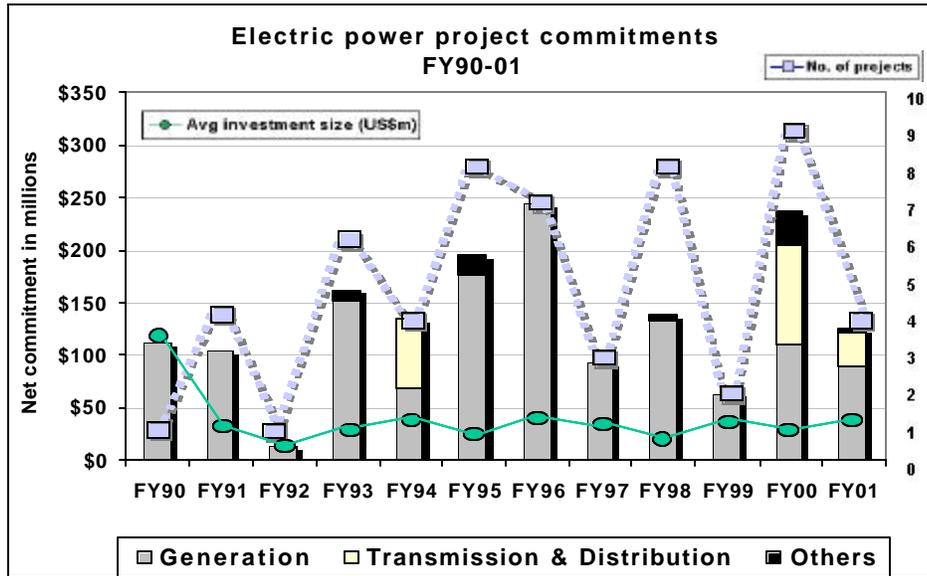
- 57 electric power projects (of which 29 are mature and were evaluated for this study; these projects are the source of evaluative findings on IFC’s PSDE operations);
- 33 advisory operations (13 standalone and 20 Technical Assistance Trust Funds, listed in Annexes 6 and 7); and
- 7 IFC-managed GEF operations (listed in Annex 8, Attachment B).

3.22 **IFC approvals soared during the 1990s.** From inception through FY89, IFC’s gross approvals in the power sector amounted to \$176.9 million, accounting for 1.5 percent of IFC’s cumulative gross approvals. By FY99, that figure had grown to \$4.54 billion, or 7.5 percent of IFC’s total approvals, driven by the upbeat market sentiment and the tremendous opportunities for private financing in the power sector. Figure 5 shows that IFC’s investment approvals in power jumped in 1993 and stayed high relative to the 1990–92 period while average investment size remained virtually unchanged. In the 1990s, IFC approved 57 projects with project costs worth \$14.4 billion in 27 countries, compared to 7 projects with total project cost of \$903 million in 4 countries in the previous three decades (see Annex 9 for list of IFC approvals in power from 1990). As of FY99, a total of \$2.5 billion of the cumulative approvals were for the accounts of participant banks through the IFC B loan program. As of FY99, every dollar of direct IFC loan financing in power raised an average of \$1.60 financing from B loan participants, compared to the corporate performance of \$1.04 for every dollar. While IFC pursued its strategy of increasing power sector support, annual commitments have lagged behind approvals, especially after 1995 due to major projects being dropped and cancelled where reforms hit a snag and/or negotiations fell through. The situation was further exacerbated by the Asian financial crisis, which dampened power demand growth and the international financial community’s appetite for investments in emerging markets.

Figure 5. IFC’s Investment Operations in the Electric Power Sector Peaked in the 1990s ...



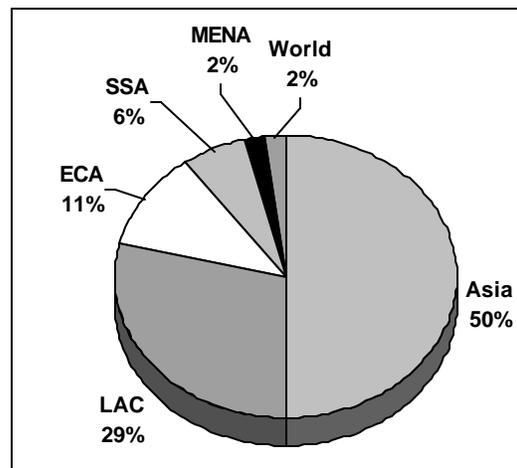
... but funding commitments were slower.



3.23 **Most IFC power projects were in generation.** Eighty-two percent of net investment commitments by funding were in power generation, mirroring the share of generation projects in the total global foreign direct investment in power in the 1990s. Investments in electric power T&D have been relatively small, largely due to the slower opening of these subsectors to private participation. Other investment commitments were in power sector funds and energy services companies. Early indications of trends beyond the 1990s, i.e., FY00 and FY01, suggest that IFC efforts in T&D have expanded recently. Of the 18 approved projects, 9 are in the T&D subsector. In terms of IFC funding, 40 percent of investment commitments were made in T&D compared to 12 percent in the 1990s.

3.24 **IFC investments have been concentrated in Asia and Latin America.** In the 1990s, East and South Asia (43 percent of projects and 50 percent of funding) and Latin America (36 percent of projects and 29 percent of funding) accounted for the bulk of IFC’s investment commitments in power (Figure 6). In Asia, IFC committed \$524 million of direct investments in 18 projects with a total cost of \$7.7 billion. Greenfield IPPs with pioneering structures (such as build-operate-transfer and build-own-operate) dominated power projects in Asia. Investments in Asia are heavily weighted toward India, Pakistan, and the Philippines in support of their governments’ reform programs of turning to the private sector to help meet growing power demand. Latin America investments were a mix of IPPs, post-privatization capital expenditure, expansion of distribution, and private equity funds for the power sector. Argentina, one of the more advanced power reformers among developing countries, was host to 14 percent of IFC funding commitments in Latin America, and second only to Chile (24 percent). Guatemalan projects were also a big recipient of IFC financing, accounting for 13 percent of the regional total.

Figure 6. IFC Investment Commitments in the 1990s Went Mostly to Asia and LAC



3.25 ***Nearly 2 of every 5 investments went to low-income countries.*** About 40 percent of the commitments (in dollar terms) were made in countries classified as low-income at the time of investment approval. This represents a higher concentration of investments in low-income countries than IFC's overall record of about 25 percent from 1990 to 1999. By contrast, only 20 percent of the commitments were made in upper-middle-income countries.

3.26 After making substantial investment commitments in energy crisis countries like the Philippines and Pakistan, IFC assumed a more regular pace, i.e., not power crisis response projects. Commitments were made in countries new to private sector participation in power (Bangladesh, Czech Republic, Nepal, Russia) and in new structures (regional and global power equity funds) and in new subsectors (renewable energy and energy service companies).

3.27 ***IFC pursued transmission and distribution projects.*** As the generation subsector advanced in pioneering power markets, IFC made a strategic decision in 1997/98 to step up its support for transmission and distribution. The results of these efforts became visible in 1999. In FY2000 and 2001, 40 percent of investment commitments were made in T&D compared to 12 percent in the 1990s. However, projects in the generation subsector still dominated IFC's approvals and commitments. The private sector proved less enthusiastic on transmission and distribution as it continued to focus on IPPs and took advantage of the availability of commercial financing for this subsector. Opportunities were also limited because transmission and distribution were slow in opening up to private participation, largely because countries gave priority to the generation subsector.

3.28 ***IFC's overall electric power sector portfolio performed better than average.*** While IFC's overall electric power portfolio performed profitably throughout the review period, there were signs of decline toward the end of the decade. Until FY96, IFC's loan and equity portfolio in the electric power sector was spotless. There had been no write-offs or loss reserves, and the loan collection rate was 100 percent. This made it one of the better performing sectoral loan portfolios. By 1997, IFC's loan portfolio started to have its share of poor performers with the provisioning of seven investments. Five investments were provisioned because of the deteriorating financial condition of the state-owned utility. The loan loss reserve in power in FY97, however, was significantly less than the loss reserve for all of IFC's disbursed portfolio. Loan yield (after provisioning), however, stayed generally in line with the performance of IFC's overall portfolio.

3.29 Equity investments were similarly more successful than IFC's overall portfolio. The estimated portfolio equity internal rate of return (IRR) had stayed significantly above IFC's all-sector equity IRR, but was less than the all-infrastructure sector return. In FY97, dividend yield was slightly lower than the rest of IFC largely due to the relatively young age of the portfolio. By FY99, the dividend yield in IFC's power sector investments already outperformed IFC's overall portfolio, reflecting the cash contribution profile of 'build-operate-transfer' (BOT) projects.

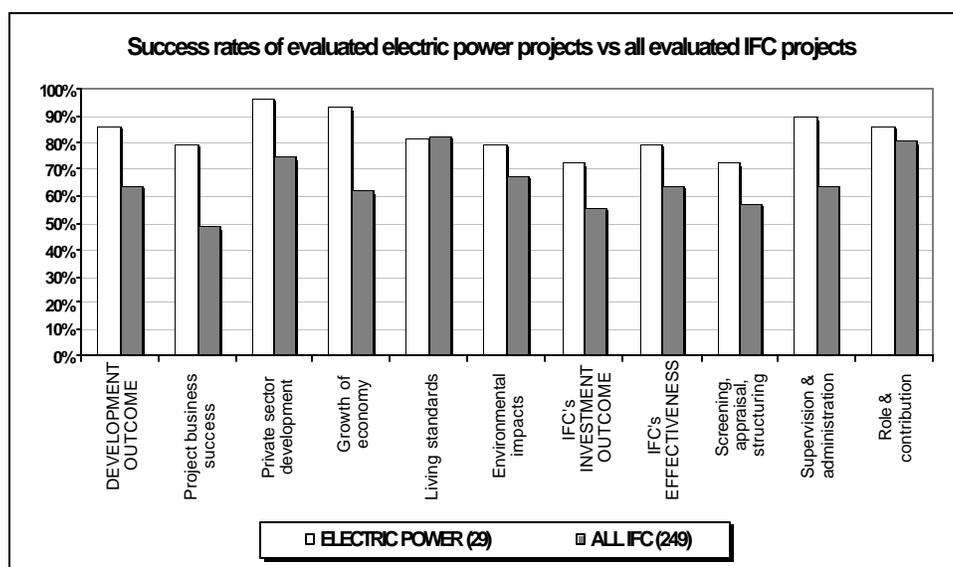
3.30 The loan and equity risk ratings²⁴, as of the end of FY99, reflected the negative impacts of stalled sector reforms, increased country risk, and project implementation issues on IFC's electric power portfolio. Loans were provisioned largely because of country and sector issues and not due to poor project performance. Thanks to good deal structuring, the companies that undertook these projects remained current with their loan obligations to IFC. Only one loan, a relatively small project that had serious technical and management problems at implementation, was rated doubtful. By FY01 overall loan and equity performance further slipped, but remained better than IFC's all-sector performance.

Development Outcomes

3.31 The *Development Outcome* of an IFC project is its impact on a country's development based on a synthesis of five performance indicators: (i) *project business success*; (ii) impact on *private sector development*; (iii) contribution to *economic growth*; (iv) impact on *living standards*; and (v) *environmental/social effects*. Annex 10 shows the basis for rating each indicator. The discussion in this section is based on the evaluation findings on all 29 mature projects in the 1990s. Annex 11 shows the performance ratings for each indicator for these projects; Annex 12 presents an analysis of the five development outcome indicators. As indicated in paragraph 3.3, the *Development Outcome* of IFC operations is based on project-level results and all these projects are aimed at the *specific WBG reform objective* of supporting private sector participation in power.

3.32 ***IFC investment operations in electric power have better development and investment outcomes than the rest of IFC's portfolio. The quality of IFC's work in the electric power sector is also better.*** Twenty-five of the 29, or 86 percent of the evaluated projects, have good development outcomes. This compares with a 64 percent success rate for IFC's all-sector portfolio based on a random sample of the 1991–95 net approvals population evaluated during the 1996 to 2000 XPSR cycle. This is also consistent with the FY2001 *Annual Review of IFC's Evaluation Findings*, which found that operations in infrastructure, including utilities, have better development results than all of IFC. Four of the 29, or 14 percent of the IFC investment operations in power, had less than satisfactory development outcomes. Two projects encountered technical problems at implementation that resulted in delays and cost overruns that could not be recovered from the tariff level agreed at entry. One project suffered from poor hydrology conditions and as a result, the offtaker had to pay more for power per kilowatt-hour. One project was poorly structured giving the owners poor returns despite the relatively successful power plant operations. Figure 7 shows the relative performance of the electric power sector in development outcome, investment outcome, and IFC effectiveness.

Figure 7. IFC's Electric Power Sector Operations Have Better Outcomes than the Rest of its Portfolio



3.33 ***Appropriately structured electric power projects can succeed in different stages of sector reform.*** Two-thirds (19) of the evaluated projects are in countries that have taken four or more of the seven steps that the WBG considers important in liberalizing the sector, as identified in the ESMAP 'Scorecard' referred to earlier.²⁵ Eighteen of these projects had good development outcomes. Six

other projects are in countries that have taken three or fewer steps toward sector liberalization. These projects had robust structures to compensate for the riskier regulatory environment in slow-reforming countries. Only one of these six projects had a low development outcome and this is because of technical and management problems rather than sector issues. Two projects are in countries that were not included in the Scorecard; two others are multi-country operations and therefore could not be categorized in any specific country.

3.34 ***Private sector participation responds to sector reforms.*** The generation subsector is often the first and easiest to open for private participation in the electric power sector. All IFC projects in countries in the early stages of reform are in generation, while IFC projects in reform-advanced countries are in three subsectors: generation, transmission, and distribution. Three transmission and distribution projects in two countries have good development results largely because they reduced T&D losses, increased access, and improved operating efficiencies. Three generation projects that sell electricity directly to private distribution companies and large industrial users in two other countries have positive development outcomes mainly due to strong demand and appropriate technology. Three other generation projects were implemented by integrated utilities with mixed results.

3.35 IFC electric power projects have good development outcomes for three reasons. *First*, electric power is a critical basic input for all industries and therefore has wide-reaching impacts on the economy. When electric power is in short supply, industrial production commitments are not met, efficiencies drop, jobs are cut, export markets are lost, and, in extreme cases, companies shut down. The cost of inadequate or inefficient electric power supply can be crippling for an economy. In the Philippines (where IFC supported three IPPs in the 1990s), power shortages led to 400,000 job cuts and annual losses to the economy of about \$1 billion, or 2 percent of gross domestic product (GDP), based on a 1992 World Bank estimate. The economic rate of return (ERR²⁶) of all financially successful IFC power projects that have been evaluated is satisfactory or better.²⁷ The contribution of IFC's power projects to economic growth as measured by ERR is greater than the rest of IFC's portfolio. The median ERR of all evaluated IFC electric power projects is 14.6 percent compared to 12.0 percent for IFC's non-financial sector portfolio evaluated from 1996 to 2000. Based on the evaluation findings of IFC projects, end users paid more for electricity or its alternatives during power shortages and they would have likely continued to do so without the capacity built by the IFC-supported projects. End users with the means installed their own electric power generators, while those who did not, turned to alternative energy sources for lighting and power needs. In both cases, the cost incurred was higher than what was paid for electricity from the grid. In Turkey, industrial customers of an IFC-financed electric power plant value the electricity they buy from the IFC project at about 40 percent more than what they pay.²⁸ This is based on the cost for generating their own electricity and the cost of business interruption associated with unstable electric power supply.

3.36 *Second*, 21 of the 29 evaluated projects are early entrants, or have innovative structures, and therefore have strong demonstration effects. Eighteen of these 21 projects, or 86 percent, have positive development outcomes. These have demonstrated to policymakers, and other potential investors, that private sector participation in electric power can be mutually beneficial to the country and to the financiers. IFC-supported private sector transactions provided the public sector a good learning experience in the dynamics and constraints of private sector power investments. BOT (build-operate-transfer) contracts evolved over time and established transparent transactions and costs, revealing the full long-run commercial cost of electricity generation to policymakers and regulatory agencies. The early success of pioneering investments attracted multiple proposals/bidders, and this led to lower costs as developers and equipment suppliers reduced their prices consistent with their assessment of the projects' risk/reward profile. Given the subsequent entry of additional IPPs, nearly three-fourths, or 13 out of the 18 IFC-financed pioneering IPPs among the evaluated projects, are not the sole source of electric power supply from the private sector. Of these 18 IPPs, 12 have been operating at, or above, contracted capacity. The others, while they were designed as base load plants, have been operated as reserve or peaking capacity.

3.37 *Third*, risks were allocated to parties best equipped to handle them. This was done at two levels: between the public and the private sectors, and among the private sector participants. The risks that the private sector could not control or manage (such as offtake volume, tariff adjustment, and long-term viability of state-owned utilities) under the prevailing regulatory environment remained with the public sector. In generation projects where the single offtaker is state-owned, the private sector carried the risks associated with project development, financial closure, construction and completion, operations and maintenance, and country/political uncertainty. Project sponsors allocated these risks contractually among the private sector participants where feasible. By and large, market, offtaker credit, logistical infrastructure, and fuel supply risks remained with the public sector. Without private participation, the public sector would have assumed *all* the risks and the financial burden associated with the projects; otherwise they would have not gone forward.

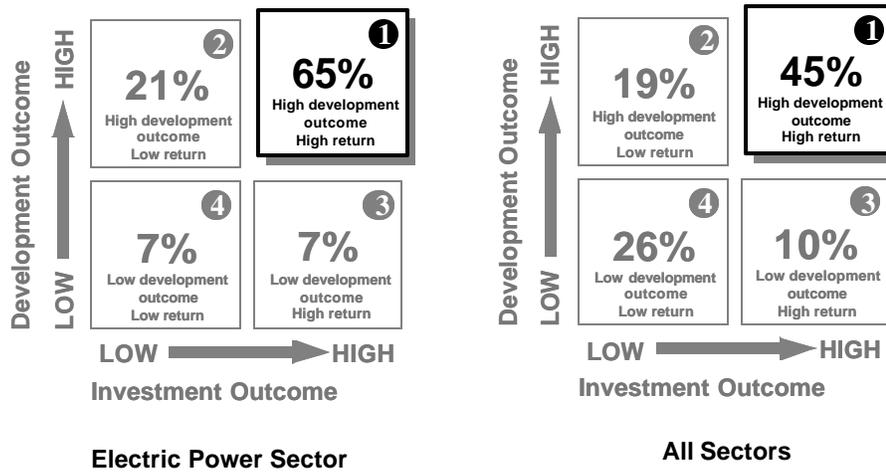
Investment Outcomes

3.38 The outcome of IFC investments is based on a synthesis rating of two investment instruments: loan—repayment performance and prospects relative to expectations; and equity—dividend performance and exit value relative to cost. Loans in arrears, as well as loan and equity investments with loss reserves, are rated less than satisfactory. When loan and equity have different ratings, investment outcome is based on the weighted average return on the combined investments. Twenty-one, or 72 percent of IFC's investments in electric power, have good outcomes compared to 55 percent for IFC's all-sector portfolio. Of the 21 investments with a satisfactory or better outcome, 18 were driven by the projects' financial success. Three investments did reasonably well despite poor project business success due to good loan and equity structuring.²⁹

3.39 The heavy concentration of electric power sector investments in a few countries adversely affected overall sector performance. Four less-than-satisfactory investments are in one country³⁰ that is plagued with a foreign exchange shortage, stalled sector reform, an almost insolvent state-owned utility, a slowing economy, and allegations of corruption. In addition, this country's sovereign risk rating dropped—it is now considered a high risk. Three of these four projects remain reasonably, but not strongly, financially sound. One project has a less-than-satisfactory return to investors relative to their weighted average cost of capital. All four continue to have good development outcomes, albeit marginally. While all these projects were originally structured as base load plants, three have been operated at low dispatch levels, similar to peak load plants. OEG estimates that the economic value of an assured peak load capacity is at least equal to capacity charges under the power purchase contracts.

3.40 Good development outcomes in electric power are associated with good investment outcomes (Figure 8), consistent with the findings of the OEG *Annual Review of Evaluation Findings* for FY2000 and FY2001.

Figure 8. Good Development Outcomes in Electric Power are Associated with Good Investment Outcomes



3.41 The proportion of win-win outcomes, i.e., good development and investment outcomes (box 1) in Figure 8, above, is significantly higher in electric power, where 65 percent of evaluated projects fall in this category compared to 45 percent in IFC's all-sector portfolio, based on a representative sample of 1991–95 approvals. In addition, the proportion of lose-lose outcomes (box 4) is significantly lower in the evaluated electric power projects. This better win-win versus lose-lose profile of electric power projects results from a combination of generally good execution and risk containment through contractual structuring. As a result, the odds have been better in electric power that the private sector will generate good development and financial outcomes even in difficult regulatory environments. Like other infrastructure projects, electric power projects have far-reaching development impacts, are highly capital intensive, and entail huge cost and financing requirements. Good financial structuring and contractual risk allocation enable electric power projects to attract the required large amount of long-term financing from the many financiers needed to complete the financing plan for projects to proceed successfully and eventually pay their debts, as well as compensate their owners appropriately for their risks.

3.42 At the same time, society at large has a better chance of realizing positive gains from electric power projects than do the project financiers: 86 percent (sum of boxes 1 and 2 above) of electric power projects have good development outcomes compared to 72 percent (sum of boxes 1 and 3) with good investment outcomes. In other words, there is a 14 percentage-point better success rate in development outcomes than investment outcomes in electric power. This pattern is the same in IFC's all-sector portfolio, but to a lesser extent: 64 percent good development outcomes compared to 55 percent good investment outcomes.

3.43 Even with the necessary risk mitigation through contractual structuring, electric power projects are not immune to commercial and business risks. The fact that 28 percent of electric power projects (boxes 2 and 4 above) gave IFC poor investment returns indicates that there is no such thing as guaranteed returns in electric power. It is also important to note that the chances of achieving a high investment outcome with a low development outcome (box 3 in Figure 8) is not significantly different in the electric power sector than in all other sectors.

IFC Effectiveness

3.44 *The quality of IFC's work in the electric power sector is better than IFC's all-sector average.* IFC's operational effectiveness³¹ in the electric power sector has been satisfactory or better

in 79 percent of its investment operations compared to IFC's all-sector performance of 62 percent. A comparison of the effectiveness of IFC Investment Departments, based on a representative random sample for all-sector 1991 to 1995 approvals, shows that industry departments performed better than their regional counterparts. Like all industry departments, the centralization of knowledge and resources in the IFC Power Department (CPW) facilitated smoother knowledge sharing across electric power subsectors and geographical regions. This specialization proved crucial for learning from experience in structuring BOT-related contractual arrangements, which are broadly similar, but significantly different in detailed terms and conditions.

3.45 IFC has done well at appraisal in ensuring that the contractual arrangements are well structured for allocating risks among the parties best equipped to handle them and for protecting the lenders. This was instrumental and a *sine qua non* for getting these capital-intensive projects financed and enabling the realization of their far-reaching positive development impacts. However, appraisal of some of the earlier generation projects placed near total reliance for credit viability on the strength of the contractual arrangements, such as the Power Purchase Agreement, Energy Conservation Agreement, and Fuel Supply Agreement. As a result, this did not sufficiently address the project's long-term dispatch competitiveness, the state utility's timely provision of needed transmission capacity, the utility's long-term financial sustainability, electricity supply/demand balance, and tariff reforms. A number of earlier projects were not subject to the same rigorous market tests³² that are undertaken today at appraisal. Overall, the contracts were fair and reasonable at appraisal, especially at a time of severe power shortages, unproven contractual integrity, and unclear regulatory environments. However, these contracts run for 15 years or more, and many unforeseen market and political developments could occur over such an extended period. Subsequent generation projects were priced lower and passed more risks to the project companies as developers and equipment suppliers competed against each other for concessions. These new facilities made the pioneering projects appear relatively expensive, especially when dispatched at less-than-planned levels due to lower-than-expected demand. New government administrations often targeted high-profile, foreign-owned projects, such as large BOTs, in looking for corruption in previous administrations. For these reasons, many public sector offtakers insisted on renegotiating IPP agreements once the financing had been disbursed. In the operation phase, and case by case, some project sponsors and their utility/government ministry counterpart have come up with mutually acceptable solutions, such as lowering the tariff but extending the term of the BOT, to adapt the agreements to evolved realities. Most often, the relative bargaining power is reflected in the fact that owners have suffered the consequences of the renegotiations by way of lower-than-expected returns.

3.46 IFC did well in the supervision and administration of its electric power portfolio, as well as in performing its role and delivering its contribution. Overall, IFC had closely supervised its electric power portfolio. There were some supervision lapses, such as client responsiveness and poor internal coordination, but these were limited to 3 of the 29 investment operations, and they have already been addressed with the creation of a supervision oversight function in IFC's Power Department. With respect to IFC role and contribution, IFC provided comfort to other financiers in a relatively new sector that many would have not considered without IFC's participation. IFC had a less than satisfactory role and contribution in 4 of the 29 investment operations. This is largely because it had overestimated its positive influence/contribution in 3 of the projects and had not played its role well in exploring other financing alternatives to one non-IPP project.

MIGA: Mitigating Political Risk to Private Investors

3.47 Through FY2001, MIGA issued 72 guarantees for investments in 39 electric power projects in 25 countries. The total coverage—\$1.742 billion, representing a total estimated project cost of \$10.2 billion—has accounted for 19 percent of MIGA's cumulative liability and 21 percent of the estimated total foreign direct investment facilitated. MIGA's AAA consisted of electric power sector-

related investment analyses and information dissemination activities under IPANet, PrivatizationLink, and PrivatizationLink Russia.

3.48 After having issued its first guarantee for an electric power project in FY94, MIGA witnessed a rapid increase of guarantee activities in that sector during the second half of the 1990s. Initially, MIGA guarantees almost exclusively supported projects in electric power generation, a subsector that still accounts for the majority of guarantees (32 out of 39 projects and 77 percent in terms of contingent liability).³³ But the number of transmission and distribution projects has grown in recent years (see Annex 13): during FY2001, three out of four guarantee projects were in the transmission subsector.

3.49 MIGA's outstanding portfolio in the electric power sector as of June 30, 2001, was \$1,408 million (or 27 percent of total outstanding liabilities). Of the 72 guarantees signed, 13 (18 percent) have been cancelled by the investors, a substantially lower ratio of cancellation than for other sectors. This is because most of MIGA's electric power projects are relatively more recent than other components of the portfolio. One contract ended because MIGA received and paid a claim during FY2000.³⁴

3.50 MIGA guarantees have been heavily concentrated in the LAC region and, to a lesser extent, in EAP (see Table 2 above, page 8). LAC accounted for a maximum aggregate liability of \$1,239 million (71 percent of the total), EAP for \$210 million (12 percent), and SAR for \$95 million (5 percent). MIGA's activities in ECA and Africa were small, with a share of 5 and 6 percent of the electric power portfolio, respectively.

3.51 Regional foci have shifted over time. While there was strong demand for coverage in Asia during the 1990s, no guarantees have been issued there since FY99; since then, projects in LAC have dominated MIGA's portfolio. The low demand for guarantees in Asia is partly because the financial crisis led countries and investors to reassess the need for new power capacity. The regional volatility in guarantee issuance highlights the dependence of MIGA on the availability of private investment opportunities.

3.52 On a country level, MIGA has maintained a balanced portfolio. While MIGA supported investments in the top-ten developing countries attracting foreign direct investment—China (5 projects), Brazil (4), and Argentina (3)—it has also succeeded in supporting investments in low-income countries. Of its 39 projects, 19 were located in 12 IDA-eligible countries.³⁵

3.53 MIGA's Operations Evaluation Unit (OEU) has evaluated eight relatively mature projects underwritten in FY95–97, all of them greenfield generation projects. This sample was drawn from the earliest electric power projects in MIGA's portfolio, which were considered mature enough to yield meaningful development impacts.³⁶ The evaluated sample represents 25 percent of all MIGA-supported generation projects (FY94–2001), but only 8.7 percent of the total installed capacity. This is due to the small size of the evaluated projects (the average capacity of the eight projects is 84 megawatts, compared to an average of all MIGA-supported generation projects of 233 megawatts). Thus, the findings are biased toward smaller-scale projects. Four evaluated projects are in LAC (one each in Guatemala and Honduras, two in Jamaica) and four in SAR (one in Nepal and three in Pakistan). Two projects use renewable energies. Six of the eight projects were visited and evaluated by external consultants and the remaining two by MIGA staff.

Development Outcome

3.54 The eight evaluated projects have helped alleviate power shortages and contributed both to improving living standards of local peoples and to stimulating downstream economic activities. Methodological limitations make it difficult to fully assess these trickle-down effects, but anecdotal

evidence of reduced blackouts and significantly increased national generation capacities (especially in Honduras, Jamaica, and Nepal) point to the generally positive impacts of these projects.

3.55 These projects also stood out for their demonstration effects, supporting early entrants in several countries that recently opened their electric power markets to private investment, as well as promoting innovative project designs and finance structures. In most instances, these projects were followed by additional private investments in the electric power sector.

3.56 There is evidence that these MIGA projects efficiently transferred technology and know-how. State-of-the-art technology was installed and considerable effort was devoted to training and turning over plant management to local employees. OEU observed that the role of expatriate managers declined in importance the longer a project was in operation. Modern technology also contributed to the higher reliability of electricity provided. However, because all projects had exclusive Power Purchase Agreements (PPAs) with state power transmission and distribution companies, spillover effects—which might have made the power sector as a whole more efficient—were often limited and depended on the reform-mindedness of the host country or the state-owned utility.

3.57 Financial contributions of the eight projects to government revenues were relatively insignificant, as most projects enjoyed some form of tax holiday during their first years of operation. Long-term PPAs with payment commitments and tariffs indexed to fuel costs or foreign exchange rate movements have a potential for constraining scarce financial resources in the host country.

3.58 MIGA has been involved in countries, such as Pakistan and Indonesia (where MIGA paid a \$15 million claim), where licenses for IPPs appear to have been awarded in excess of the actual needs of the country. One project in Pakistan has experienced substantially reduced dispatch rates. In Indonesia, MIGA underwrote a project during 1996 and issued a guarantee in February 1997 (before the Asian financial crisis) based on prevailing assumptions on Indonesia's future energy needs. The claim was directly linked to the reassessment of these needs in light of the sharp economic downturn in Indonesia during 1997–98.

3.59 The development impact of the project in Indonesia is problematic: the project was clearly a failure in that it did not go forward and, consequently, the capacity and reliability of power supply did not improve. (As of 2002, there is a severe lack of peaking capacity in East Java.) On the other hand, the cancellation of the project by the government avoided the further buildup of unneeded capacities and payment commitments resulting from the PPA.

Effectiveness

3.60 One measure of MIGA's effectiveness is its ability to catalyze investment. Investments of \$4.08 were facilitated for every dollar of insurance coverage issued in the power sector (on a gross basis, before re-insurance). This compares to a MIGA average of \$5.45 per dollar insured from a cross-sectoral sample of 52 projects. The relative lower mobilization of investment in the power sector seems to stem from the pioneer status of most of the sampled projects and the desire by investors for more complete coverage.

3.61 OEU has found evidence that most of the eight evaluated projects depended on political risk insurance, since all the investments represented first or early entrants in their respective host countries. Investors are more likely to require political risk insurance if they are entering a new market or country, or pioneering a new business model (such as IPPs). Furthermore, investments in power plants involve large sunk costs and require close interaction with local authorities for their inputs and outputs, which raises the risk profile of an investment project. Hence, it can be inferred that most of these investments were dependent on obtaining MIGA insurance and that this coverage was effective in reducing perceived risks on the part of the project sponsors.

3.62 In a few instances, MIGA collaborated with IFC in support of electric power projects. Jamaica stands out in particular, as it involved close collaboration between IBRD, IFC, and MIGA in promoting the PSDE reform agenda, each institution using its specialized services, which eventually led to the commercialization of Jamaica's public utility and an increase in generating capacity.

Profitability

3.63 MIGA has paid one claim in the power sector and has conducted mediation activities in this sector to resolve disputes, thereby avoiding potential claims. In the Indonesian claim, the financial loss to MIGA was limited, and was further mitigated by prudent use of reinsurance (covering 70 percent of MIGA's exposure). In the medium term, MIGA expects to fully recoup the claim loss. Additionally, MIGA incurred costs because of the high incidence of disputes between power sector investors and local authorities, but the success of mediation activities appears to have justified the use of additional resources.

3.64 In conclusion, while the evaluation of only eight projects does not allow for drawing robust inferences about MIGA-supported power projects, the early indications of MIGA performance in the sector are positive.

4. Sector-level PSDE Outcomes

4.1 The preceding chapter discussed the project-level results of the WBG's PSDE portfolio. Given the long periods required to reform power sector structures and ownership, however, project achievements are by themselves insufficient drivers of sectoral outcomes. This chapter discusses these sector-level outcomes, focusing on the Bank's performance in fulfilling its mandate to promote PSDE through reforms, with support from IFC and MIGA transactions. During the 1990s, the Bank was present in 68 countries across 6 regions pursuing (through diverse instruments, sectors, and advisory work) long-haul reforms and their expected sector-wide benefits, while IFC and MIGA were involved in specific private transactions in generation expansion, IFC in 29 countries and MIGA in 25 countries mainly in LAC and SAR.

4.2 Given the lack of systematic, sector-level data collection in an increasing number of borrowing countries (as the sector becomes more fragmented), the OED assessment of sector outcomes relied on a combination of the latest Project Status Reports; OED's Evaluation Summaries and Project Performance Assessment Reports; a task manager survey; a literature review, including recent research reports posted in the Rapid Response Unit website; the 1999 ESMAP paper on the reform scorecard; and the ECA study on private participation in the power sector.³⁷ The main findings are presented below, first providing regional distinctions, followed by a discussion of specific sector outcome indicators.

4.3 Evidence presented in this chapter shows that sector-level outcomes have been more disappointing than WBG project-level outcomes except in countries with the most advanced reforms. The Bank—pursuing multiple and complex reform objectives through a range of instruments across all regions—achieved good results where strong political commitment and local champions existed, the road map to reform was clear, and there were early wins. Otherwise, where reforms have been weak or slow to take root, the Bank obtained poor or, at best, mixed outcomes. IFC and MIGA—focusing on the single reform objective of supporting private sector participation and responding to market demand—obtained good outcomes. The WBG underestimated the complexity and time required for reforms to mature and achieve lasting and equitable country and sector outcomes. But while good individual private sector project outcomes contribute to sector reform, they cannot by themselves ensure good sector-level outcomes. From a different perspective, good private sector

project outcomes are possible at different stages of reform and are not a sufficient gauge of the WBG's achievement of its overall PSDE objectives.

4.4 At the end of the 1990s, overall progress for power sector reforms in developing countries (as encapsulated in the “seven reform areas”) had clearly fallen short of expectations that had been set by the WBG's 1993 Policy, its 1996 Good Practice statement, and PSDE promotion as it evolved in practice during the 1990s. This resulted from the poor investment climate for attracting private investment in many low- to middle-income countries; reluctance on the part of some governments to tackle the politically difficult decisions involved in eliminating subsidies and other rents accruing to powerful interest groups; and a drying up of interest in emerging markets investment. Today, only a few countries (mainly in LAC and some in ECA) have achieved advanced reform status. Many of the Bank's country clients are either undecided or considering which reform route to follow; many of those that have moved forward are stalled in their attempts, and some have reversed privatization plans.

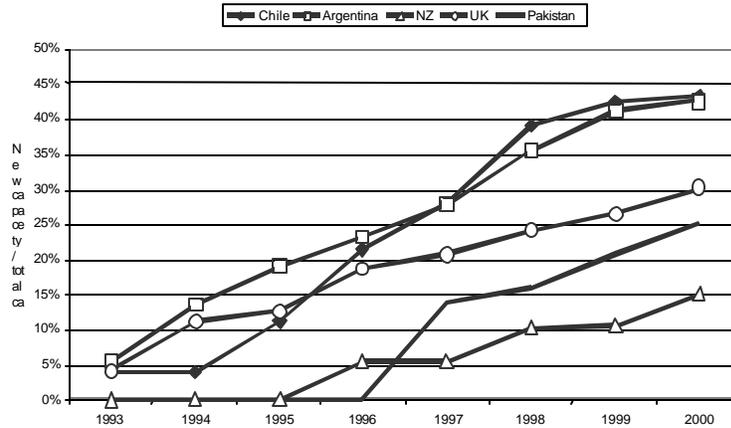
4.5 With a view to informing the implementation of the Energy Business Renewal Strategy (EBRS), this chapter is organized along each of the main objectives of the strategy: (i) promoting PSD, (ii) macro-fiscal balancing, (iii) helping the poor directly, and (iv) protecting the environment. Special emphasis is given to the PSD promotion objective, which is most relevant to this study and is discussed immediately below.

Promoting Private Sector Involvement

4.6 *PSDE is important and worth pursuing: in committed countries with advanced power reforms, outcomes have been good.* OED's portfolio and literature reviews provide evidence of good sector outcomes in many LAC and some ECA countries with longstanding commitment to reforms in the structure and ownership of their power sectors. While much of this evidence is recent (thus indicating the long-haul nature of the reform process, and the Bank's role as facilitator rather than primary catalyst for reform, since many of these countries started their reforms in the late 1980s/early 1990s), the strong positive direction of sector improvements points to the importance of pursuing PSDE. OED's review also shows (most clearly in AFR) that where reforms have not progressed, operational documents continue to report financial bankruptcy of state-owned utilities, poor and deteriorating service, and the inability to build or rehabilitate power infrastructure in pace with burgeoning demand.

4.7 Figure 9, and the regional discussions below, show that one of PSDE's early gains is increased generation capacity (for comparison, the chart shows the United Kingdom and New Zealand, although in the latter there are presently concerns about the adequacy of supply). This was especially important in the 1990s when many developing countries were experiencing severe supply shortages in the midst of global financial crises. The WBG provided PSDE support to Argentina and Pakistan. In Argentina, the availability of thermal generation plants has increased substantially since the reform process started.³⁸ It is important to note, however, that generation capacity additions are a meaningful indicator only when seen in the context of overall electricity supply and demand balancing, and measures to achieve investment efficiency.

Figure 9. Cumulative Additions of New Power Production Capacity Since 1993 in Five Countries with Reforms in the Energy Sector in the 1990s



4.8 In addition to supply expansion, gains in “advanced reform” countries include macro-fiscal stability, greater access and better service quality. Table 4 presents the PSDE outcomes reviewed, and their specific indicators. As a result of the WBG’s focus on macro-fiscal objectives in its PSDE involvement during the 1990s, most of the available data are on positive and large macro-fiscal outcomes, and are discussed separately following the PSD section.

Table 4. Desired PSDE Outcomes Are Numerous and Complex

<i>Main Categories of PSDE Outcomes</i>	<i>Specific Indicators</i>
Macro-Fiscal Impacts	Earnings from divestiture of public power assets Additional private investments Income taxes Dividends to government Reduced subsidies
Access to Service	Extension of electricity grids to rural and poor urban communities
Quality of Service	Unscheduled and scheduled service interruptions Voltage fluctuations Choice and responsiveness in service options
Price Impacts and Affordability of Service	Wholesale electricity prices Retail electricity prices
Labor and Employment Impacts	Layoffs and safety nets Number of employees in the power sector

4.9 Perhaps the best illustration, outside LAC countries, of successful PSDE outcomes is Côte d'Ivoire, where substantial improvements have been recorded in several indicators (Box 2).

Box 2. Côte d'Ivoire Shows Good Outcomes from PSDE

In Côte d'Ivoire in 1990, a 15-year operating concession for the entire power sector was granted to the privately owned Compagnie Ivoirienne d'Electricité (CIE), following the bankruptcy of the state-owned power utility. Service quality improved markedly after CIE took over operations. Outages were reduced from an annual average of about 26 hours per consumer in the mid-1980s to about 14 hours in the late 1990s. Metering, billing, and revenue collection performance improved dramatically. Ninety percent of all private consumers now settle their bills on time, and irrecoverable arrears are less than 1 percent. Nontechnical losses at the low-voltage level in 1999 were only 3 percent of billings. Total energy losses in 2000 were under 15 percent, much lower than in many other electric utilities. In addition, there has been a rapid expansion in access to electricity during the 1990s. The number of low-voltage consumers nearly doubled between 1990 and 2000 to 763,000, with only a modest 7 percent rise in the number of staff.³⁹

The increase in productivity has been substantial: the number of consumers per employee rose from 121 in 1990 to 209 at present. CIE staff have gained through better remuneration, improved working conditions, and substantial skills upgrading. Development of institutional capabilities in CIE has been impressive, far beyond what had been achieved in many years of donor-funded technical assistance and training support to other African public utilities. Virtually all the senior management is in Ivorian hands. Equally important, CIE's record in cleaning up distribution opened the door to private investment in both power generation and gas production. Both the Bank and IFC participated in the financing of the first two IPPs, Ciprel and Azito. The Azito 297-MW gas-fired power plant was the first power project in Sub-Saharan Africa to attract a syndicate of private commercial banks as lenders. In addition, an IDA partial risk guarantee, for \$30 million, was used for the first time to increase the amount and maturity of private financing for the project. Private companies now produce two-thirds of Côte d'Ivoire's power.

4.10 Another good, but less well known, illustration of successful PSDE outcomes is El Salvador, where significant improvements have been shown in several performance indicators (Box 3).

Box 3. El Salvador—WBG Work in a Country Committed to Power Reforms

The technical assistance project was delayed for two years while the "optimal" structure of the power sector was defined; during this period, there were divergent views in the Bank regarding the extent of privatization and reform to be carried out. In the end, the project succeeded in: (a) developing a legal and regulatory framework for the sector including the restructuring of CEL (Comisión Ejecutiva Hidroeléctrica del Río Lempa, the state-owned electricity utility), organization of the Transactions Unit (Unidad de Transacciones), and initiating the design of a wholesale market for electricity; (b) drafting and enacting a new Electricity Law, and creating the sector regulator; (c) estimating the marginal costs; (d) preparing a Sector Environmental Action Plan and implementing an Environmental Impact Assessment (EIA); (e) developing a least-cost expansion plan for the system; and (f) providing training to CEL and government staff in new operations and technical aspects. Sector reforms have led to an increase in service coverage, a reduction in system losses, and a decrease in state subsidies. Progress continued even after World Bank assistance ended. The four government-owned distribution companies were privatized in January 1998, and the generation companies were to be privatized in 1999. With regard to privatization, it is worth noting that the sale at 40 percent over book value of 75 percent of the distribution companies' shares, totaling US\$575 million, had a substantial financial impact (equivalent to 5.5 percent of the 1996 national GDP of US\$10.5 billion).

In addition, IFC approved a \$120 million investment to expand and rehabilitate the distribution networks. IFC also approved \$15 million in financing for a regional power development company focusing on renewable and co-generation projects.

Box 3 (continued)

The following lessons can be learned from PSDE in El Salvador. (a) Where applicable, the strategy for power sector reform in a given country should be designed with due consideration to the potential size of a neighboring regional market, which is usually several times larger than the individual national markets. Cases in point are El Salvador (already under implementation) and Belize (still in the design stage) in the Central American market, and Bolivia in the Mercosur market. In these cases, the relatively small size of the national power sectors prompted initial preferences for restricted market liberalization. Further analysis however showed that a more sustainable and liberal strategy should be tailored to cater to and benefit from the larger regional potential market with, as required, suitable transitional stages. (b) Sector policy and regulatory reform should be well underway before privatization in the sector, so that bidders feel that they are entering a secure environment, and will have a sound basis for calculating their bids. Much of El Salvador's success in privatization is due to the progress that was made beforehand in preparing comprehensive sectoral legislation and rules. (c) The government's reform and privatization team should be staffed with qualified top-level staff, with proven commitment to the reform and track record of getting things done with extremely tight deadlines. (d) It is often better to break up large companies, so as to make them less risky and more attractive to a range of buyers and to encourage competition. (e) Full time attention must be paid to constituency-building, lest public resistance impede the process or threaten its results. (f) High-level political support is critical for the success of the reform and privatization process. When the message from the top is clearly in favor of privatization, the process moves ahead rapidly.

4.11 *But PSDE remains a “work in progress”: outcomes can also be mixed or efforts can fail.*

Except for a few LAC countries (notably Chile and Argentina), PSDE reforms beyond commercialization and corporatization started only in the mid-1990s; hence, most countries are still at the early stages of reform (only about 15 to 20 percent of the 80 countries where the WBG supported PSDE have reached or are approaching intermediate to advanced reform status).

4.12 There are few positive sector outcomes to report in AFR, EAP, SAR, and some ECA countries, as continued economic crises, political turmoil, and government resistance to reforms have prevented sustainable power reforms from taking hold. Examples from AFR are numerous. Given the importance of some of the countries involved, unsuccessful efforts have tended to dominate the reform dialogue, and highly publicized controversies drown out cases of “early wins.” The Bank itself is learning PSDE by doing (see Chapter 5), but outcomes are poor when the country's commitment is weak or absent, as illustrated by the following examples.

4.13 In EAP, the Bank' regional strategy highlights the impact of the Asian financial crisis in lowering demand growth, and the implications of low utilization of IPPs that were contracted based on high dispatch assumptions agreed at entry by the government and the private sector. The difficulty in meeting financial obligations under the take-or-pay Power Purchase Agreements (under IPPs) on Asian utilities resulted from an unfortunately timed combination of insufficient sector reforms and the advent of macroeconomic crises, as well as what turned out to be an oversized IPP program relative to T&D capacity. The strategy paper indicates that the financial viability of many utilities has been seriously damaged and their creditworthiness still needs to be restored. It is an open question whether, without the IPPs, governments would have built the same amount of additional power capacity and thus ended up carrying the financial burden of capacity under-utilization. This was illustrated in *Indonesia*, where Bank warnings against uncompetitive, costly, and non-transparent IPPs went unheeded. IFC also expressed the same concern and stayed out of such projects. In any event, IPP overcapacity did not occur due to the post-crisis cancellation of many contracts, and the country is once again facing power shortages. Furthermore, existing IPPs are dispatched at sub-optimal levels due to uncompleted transmission lines, and not due to depressed demand. And while the government succeeded in renegotiating PPA tariffs downward, this was offset by an increase in the capacity factor used for price-indexation, and extension of the PPA terms from 30 to 40 years. After the crisis, the Bank decided to maintain a low profile in Indonesia. In the *Philippines*, Bank efforts were less than satisfactory. Its

engagement through reform-intensive projects and sector work in the 1990s was followed by a strategic decision to relinquish the lead role in policy advice to the Asian Development Bank, due to poor portfolio performance and the inability of the government to pass enabling legislation for power sector reforms. A review of this approach seems warranted, given the complex challenges of establishing the power sector's regulatory framework, as well as its market and ownership structure, following the recent passage of the Electricity Industry Reform Act.

4.14 In *Pakistan*, PSDE outcomes are highly mixed. Private power investors responded enthusiastically to the government's policy, but in the absence of real reforms and the persistence of severe T&D bottlenecks, supply/demand imbalance resulted, severely straining the finances of WAPDA, the state-owned single buyer. Today, more than half of the population still has no access to electricity, and rolling blackouts are common in some areas. Recent restructuring of WAPDA, tariff adjustments, and improved operational efficiency has enhanced its financial condition, but its reliance on more expensive (relative to hydro) thermal generation from WAPDA's own plants and IPPs as a result of a drought, depreciation of the rupee, and the costs associated with the under-utilization of IPPs have caused WAPDA to fall out of compliance with financial covenants. In *India*, despite promising early efforts, sector reform has stalled in Orissa, due to waning government commitment, and the financial condition of the sector remains precarious. In Andhra Pradesh, government commitment is stronger and the state is ready to privatize distribution. But political opposition to large tariff adjustments must be overcome to improve the poor financial situation of the sector.

4.15 In *Ukraine*, the Bank's PSDE efforts were unsuccessful. In 1994, the Bank supported a project to develop a competitive electricity market and establish operating conditions that would encourage electric power companies to seek full cost recovery and ensure the sustainability of operations. Despite a joint effort by international development agencies, regulatory reforms were not achieved, largely due to non-payment and government interference in issues such as tariff setting. The Bank loan was suspended in July 1997, and ultimately withdrawn by the Ukrainian government in 1999, due to the impacts of the Russian financial crisis. In *Russia*, the Bank (primarily through 3 SALs) has had an active policy dialogue on reforming the electric power sector. The dialogue focused on establishing an electricity regulator and a market-based dispatch system; unbundling of generation, transmission, and distribution activities; and privatization of generation and distribution. According to OED's Country Assistance Evaluation (CAE), while considerable progress has been made in achieving the Structural Adjustment Loan (SAL) objectives (more rational pricing since 1997; improved cash collections since 2000; a new resolve to demonopolize the power industry since mid-2001), the outcome of the power sector restructuring program remains an open question, and will depend on how it is implemented at the provincial level. The CAE recommends that the Bank should be ready to expand its ongoing technical assistance to restructure the electric power monopoly, and also consider guarantees, equity investments, and lending for generation and transmission, but only after restructuring is well under way.

4.16 ***And PSDE promotion needs to be anchored to broader reforms.*** PSD alone is not the fundamental objective of power sector reform; rather, it is one tool to achieve sector efficiency, such that power is provided at least-cost and in an environmentally and socially sustainable way. In addition to PSD, other measures are also required to facilitate reforms. For example, *fuel market liberalization* is essential in order to maximize efficiency gains; in the context of IPPs, where long-term contracts are introduced, pass-through mechanisms need to be put in place between the wholesale and retail tariffs (for power and fuel purchased) in order to protect the financial viability of the power utility and lessen the drain on fiscal resources. In this regard, positive cash flows are important in enabling private sector participation, hence *adequate budgetary provisions* need to be made to ensure that the public sector is able to pay its utility bills. Otherwise, commercialization efforts fail, since the public sector frequently represents a high proportion of power sales. *Reserve capacity planning* is also an important issue: investment inefficiency directly increases capital and operating costs, and can have serious macro-fiscal impacts. Major over- or under-investment (Philippines and Indonesia, respectively). or inappropriate

plant siting (Pakistan) can have major consequences on the capital cost of associated investments, and ultimately impinge on access, quality, reliability, and affordability of service. Addressing these issues goes beyond PSDE operations and should be tackled very early in the reform process. Finally, more attention needs to be given to the *development of domestic capital markets*. Most developing country power utilities do not earn foreign exchange, and their dependence on foreign direct investment and foreign currency loans has led to high, and unaffordable, electricity prices. While it is not easy to mobilize domestic capital, the WBG should address it as part of the overall effort to improve the investment climate, as many privatization efforts have failed for lack of access to the resources necessary for efficiency improvements and new investments.

Macro-Fiscal Balancing: Reducing the Power Sector's Burden on Public Resources⁴⁰

4.17 *Where PSDE progressed, promised fiscal gains have been achieved and are very large.* OED's portfolio review found that macro-fiscal balancing was a key objective in the Bank's PSDE program during the 1990s, as a response to global financial crises that worsened the inability of most developing countries to mobilize resources to meet their serious power supply shortages. Successful PSDE eventually brought many fiscal gains (the high technical and financial costs of restructuring at the start of the reform process may prevent governments from realizing immediate budget relief). In LAC alone, divestitures of public power assets brought in \$35 billion by 1997, at a time when funds were needed to stabilize their economies and shore up social budgets. For example, Chile in the 1980s, Argentina and Bolivia under the Brady Plan, then Brazil, Colombia, and Peru in the mid-1990s. The substantial fiscal rewards of PSDE in LAC have been reaped through additional private investments in the sector,⁴¹ income taxes,⁴² dividends to government, and reduced subsidies, as presented in Table 5.⁴³ In Bolivia, privatization of state-owned enterprises (SOEs), increased foreign investment, and an independent regulatory regime have led to improvements in coverage, quality, and productivity. Non-technical losses have been reduced significantly. In Chile, distribution losses were reduced by half in seven years and, in Argentina, in three years.

Table 5. PSDE Outcomes from Bank Activities in LAC “Advanced Reform” Countries

<i>Countries/Reform Pursued</i>	<i>Current Status</i>
<u>Argentina</u> Privatization of Edesur and Edenor	<u>Macro-Fiscal</u> : By 1998, energy sales increased by 79% and 82%, and losses were down by 68% and 63%, respectively. <u>Efficiency Impacts</u> : By 1998, number of employees were reduced by 60%, and 63%, yet customers per employee increased by 180%, and 215%.
<u>Brazil</u> Privatization in the electric power sector	<u>Quality of Service</u> : Length of interruptions per consumer has gone down from 26.4 hours per year in 1993 to 24 hours per year in 1998. <u>Efficiency Impacts</u> : Labor force of the distribution utilities has gone down from 83,784 in 1993 to 59,348 in 1997.
<u>Bolivia</u> Privatization of SOEs Increased foreign investments	<u>Macro-Fiscal</u> : Private Investments had reached US\$204 million by mid-1998, allowing demand growth over 7 percent per year to be met. The Bolivian economy gained new foreign capital. Private investors paid approximately US\$1,600 million to gain control of all capitalized public companies. The Bolivian Treasury saw fiscal revenues from the power sector (sales and profit taxes) increase by 247 percent in three years from (US\$17 million in 1994 to approximately US\$42 million in 1997). In addition, the service of ENDE's debt of approximately US\$61 million, guaranteed by the government, was transferred to the private companies. <u>Affordability of Service</u> : Electricity consumers have not seen rate increases (except for inflation and fuel price adjustments) and now have direct access to the power companies through newly created consumer offices to resolve grievances.
<u>Chile</u> Privatization of Chilectra	<u>Macro-Fiscal</u> : Energy sales increased by 26%, losses down by 70% by 1998. <u>Efficiency Impacts</u> : Number of employees reduced by 9%. Customers per employee increased by 37% by 1998.
<u>Colombia</u> Private participation	<u>Macro-Fiscal</u> : Private sector investments in the power sector increased significantly in the last 5 years. Private participation in power generation increased from 25% in 1996 to 56% in 2001. Private sector participation in transmission is 10%, in distribution 60%, and 60% in commercialization.
<u>El Salvador</u> Unbundling Privatization of distribution companies	<u>Macro-Fiscal</u> : Sale at 40% over book value of 75% of the distribution companies' shares totaling US\$575 million had a substantial financial impact (equivalent 5.5% of the 1996 national GDP of US\$10.5 billion). <u>Access to Service</u> : Service coverage improved from 71% in 1998 to 74% in 2001.
<u>Panama</u> Privatization of power sector companies Restructuring of the power sector	<u>Macro-Fiscal</u> : In the FY 2000, all the privatized power sector companies have contributed US\$70.8 million to the treasury, from which US\$34.5 income taxes (US\$9.2 million from the distribution companies and US\$25.3 million from the generators) and US\$36.3 million in dividends, to the shares still in government hands (US\$6.2 million the distributors, and US\$30.1 million the generators). <u>Access to Service</u> : Installed generation capacity has increased by 40%, the number of customers has increased by 6% between 1998–99, energy sold per employee increased by 22% between 1999 and 2000.
<u>Peru</u> Privatization of Electrolima	<u>Macro-Fiscal</u> : The sector has shifted from draining the public treasury (a loss of US\$300 million in 1990) to being a source of operating profits (US\$300 million in 1998). Transmission and distribution losses decreased from 21.8% in 1993, to 12.4% in 1998. <u>Access to Service</u> : Service coverage has expanded from 53% in 1993 to nearly 70% in 1998. <u>Efficiency Impacts</u> : The customer/employee ratio has increased from 316 to 520 between 1993 and 1998.

4.18 **Access and sales increased.** When macroeconomic conditions permitted, sales and electricity consumption per capita increased (after absorbing any initial price shocks): in Chile, it grew at 7 percent, in Bolivia at 2 percent, in contrast to unreformed sectors on the verge of bankruptcy. In Panama, electrification coverage has grown significantly as consumer prices have dropped. New connections and the percentage of households having electricity access also grew: in Chile, access grew from 64 percent to 95 percent in 1990–94; in Bolivia, after dropping to 56 percent before the reform, it bounced back to 70 percent in 1997.

4.19 **Subsidies decreased.** Private power operators saved governments heavy operating subsidies; the WBG's involvement in Peru helped break down the culture of electricity subsidization. Where private operators took over retail supply, they also drastically reduced payment delays, theft, and unpaid bills (from 30 percent to 12 percent in Buenos Aires, and about the same in Côte d'Ivoire, where assets were not sold, but just leased). A lot of the gains stemmed from asset management. Typically, over a five-year period, plant availability increased by 10 percent to 40 percent, the number of customers per employee also increased by 50 percent, and outage indicators decreased by more than half. Reforms also improved the efficiency of capacity expansion, although IPP capacity costs and output prices showed wide variations, the lowest ones tending to be those that were obtained after competitive bidding.

4.20 ***Asset values grew.*** Efficiency gains from reforms and PSDE were used first to turn around utility finances and then fund their growth: the rate of return on assets jumped 7 to 12 percent from values that were low or negative, as in Argentina. The financial market and privatization mutually reinforced each other as reforms matured. In Chile, market capitalization increased, and power companies saw the real value of their shares grow a thousandfold, from 1984 to 1994, as they acquired control of a sizeable fraction of the power sectors in neighboring countries.

4.21 ***Real prices decreased for industrial and commercial consumers.*** Efficiency gains were ultimately passed on to power purchasers: bulk prices dropped where competitive pools were set up, most notably in Chile and Argentina, by 20 to 50 percent.⁴⁴ Tariffs also decreased for industry and commerce, but often they rose for other customers because tariffs were and often still are below the cost of supply. However, the U.K. experience with residential utility market liberalization indicates that while the reorganization of gas and electric power industries reduces costs, these cost savings may not be shared equitably with all consumers.⁴⁵ And while all consumers benefited, to some extent, from lower prices, the greatest benefits went to shareholders and to richer consumers.⁴⁶ However, detailed evidence that reforms have led to efficiency gains has not been systematically compiled and analyzed, and remains limited to a few countries, e.g., Argentina, Chile, Côte d'Ivoire, and Peru.

Helping the Poor Directly

4.22 ***Little is known about the impact of reform on the poor because data has not been gathered systematically.*** To achieve the EBRS objective of directly helping the poor, PSDE reformers need to address issues of increasing access of the poor and ensuring affordability to pay for both access and consumption charges. Based on a review of 154 projects, OED found that Bank project documents provide very little data to evaluate the impact of power sector reforms on the poor. The little data that is available is anecdotal and not based on sound monitoring and evaluation (M&E) systems, or empirical evidence. This presents a major challenge to policymakers, who lack the data to rigorously support any pro-poor policies that they may wish to adopt (to improve the welfare of the poor, or at least do them no harm), while carrying out power reforms.⁴⁷ The 1990s represented many missed opportunities to ensure that rural energy, energy efficiency, and social and environmental benefits are addressed as reforms are put in place, which, given the long timeframes for reform, are one-time opportunities in most developing countries (see the analysis in a recent study by the World Resources Institute (WRI)).⁴⁸

4.23 ***The little evidence available indicates that the poor are often the last to benefit from increased access from reform.***⁴⁹ In most countries, the rural poor tend to be omitted because private operators are reluctant to serve low-income clients given that these markets are not financially viable on a freestanding basis. In urban areas, residential customers are more exposed than commercial users when connection costs increase due to reforms, and the social impact is especially acute when residential use has been previously subsidized. Where reforms involved adjusting tariffs to cover costs, poor households were adversely affected, at least in the short run. In Poland, energy subsidies have tended to help the rich more than the poor.⁵⁰ In Hungary, energy price reforms did not appear to have a regressive impact, suggesting that subsidies prior to reforms were not effectively targeted at the poor.⁵¹ Based on a pioneering field study in Guatemala,⁵² the social tariff, introduced following privatization of the power distribution companies, largely fails to reach poor households, and access to modern utility services remains highly inequitable (the richest 20 percent are twice as likely to have electricity connections than the poorest 20 percent). Electricity coverage is close to universal in urban areas, but reaches little more than half of rural households.

4.24 Globally, about one-third of the world's population (about 2 billion people) lack electric power, but this may be an underestimation as only a few cross-country surveys document access.⁵³ Based on research findings that growth is good for the poor,⁵⁴ the argument has emerged that

addressing the generation supply constraint has led to GDP growth, which in turn benefited the poor. While this may be demonstrable in a macroeconomic context of trade liberalization and transition into market economies, the argument is less tenable in the sectoral context of scant (and recently, possibly negative) private capital flows into developing country electric power sectors. Evidence from the Organisation for Economic Cooperation and Development (OECD), and others, indicates that a small number of large, international private power companies invested in a small number of developing countries during the 1990s. Thus, whatever indirect poverty reduction impacts PSDE may have had were restricted to only about 10 countries, including those where the poor's energy access remains very low, such as Indonesia, Pakistan, and the Philippines. While the WBG's PSDE assistance has been increasingly aimed at medium-sized and small, low-income countries, many of these countries failed to attract substantial private power investments in T&D, and their poor will only benefit from the expected growth in access as T&D projects are carried out.

4.25 Macro-fiscal objectives of power reforms are important, but the poor's energy access and environmental mainstreaming (“doing good” in addition to “doing no harm”) have been neglected. The WBG's PSDE efforts have understandably responded to crises in client countries during the 1990s and have therefore focused on macro-fiscal balancing and improvement of utility finances. But, as raised in the WRI study, this has resulted in a relative neglect in ensuring that: (i) the poor can get help in order to afford commercial power tariffs once subsidies on generation plants are removed; and (ii) regulatory reforms are not so “hard wired” that they make it difficult to simultaneously implement social and environmental objectives. Despite best practice papers on energy efficiency and rural energy, in 1993 and 1996 respectively, the Bank has made little effort to pursue these areas in the 1990s PSDE portfolio—or in the energy portfolio as a whole—partly due to lack of country department interest and support, according to staff interviews and the task manager survey. The relatively few projects that materialized were mainly at the behest of the championing task managers, often buoyed by the availability of Global Environment Facility (GEF) funds. While there is nothing wrong with individual initiative, it does reflect a lack of institutional drive and a coherent strategy for rural energy and energy efficiency for most of the 1990s (this has turned around as a result of the Fuel For Thought strategy, as discussed below).

4.26 *The domestic private sector is not being tapped adequately*. From the 154 projects reviewed, there is also little evidence of a concerted Bank effort to reform regulatory frameworks, such that local private capital and management capabilities can be tapped to invest in decentralized energy systems. Only a handful of completion and supervision reports on participatory mechanisms and stakeholder consultations mention the inclusion of local investors in the design of major reforms. Despite the growing institutional focus on rural energy financing mechanisms, including the local private sector, both formal and informal ESW on rural energy and energy efficiency issues has been insufficient. A positive development, however, has been the absorption of rural energy work within the Private Sector, Markets, Finance, and Rural Infrastructure thematic group, where issues of local private capital and innovative finance schemes (including the promising approach of “output-based aid”) can be addressed integrally with the larger challenge of developing rural markets. The Bank-wide Energy and Poverty Thematic Group has also been revived by the Bank's Energy Sector Board.

Protecting the Environment

4.27 Adherence to the World Bank/IFC/MIGA Environmental and Social Safeguards policies and the guidelines contained in the 1998 Pollution Prevention and Abatement Handbook (PPAH) are requirements for all WBG projects. The WBG also follows an environmental strategy for the energy sector contained in the Fuel For Thought (FFT) strategy paper. The Bank's performance with respect to its environmental safeguard policies is discussed in the OED Review on the World Bank's Performance on the Environment (2001). Since the Board approved FFT in 2000, changes have been made in the institutional context that affect its implementation. These include completion of ‘Making

Sustainable Commitments: An Environment Strategy for the World Bank', and the Energy Business Renewal Strategy (EBRS); the emergence of the Poverty Reduction Strategy Paper (PRSP); and the Bonn Agreement on the Kyoto Protocol. The ensuing debates have focused on trade-offs between the short-term and long-term needs for poverty reduction and economic growth, relevant to local and global environment issues.

4.28 ***Environmental mainstreaming in the Bank is still weak, but making progress.*** In its 2001 Environment Review, OED found that environmental mainstreaming has not yet taken full effect in Bank policies, programs, and operations, but some progress is being made. In the Bank, some 35 percent of Country Assistance Strategies produced in FY2001, and half the final PRSPs produced so far, include discussion of energy and environment issues. Demand for full-scale energy and environment reviews is lower than originally expected under the Fuel for Thought strategy, with clients preferring more focused analytical and advisory work. Analytical work is creating results either directly or through lending operations. An analysis of active energy lending operations shows a growing proportion with at least one environment objective, amounting to 69 percent in FY 2001, compared with 9 percent in FY1990 and 10 percent in FY1997.

4.29 Bank outputs against established short-term FFT indicators have been greater than expected, according FFT's annual report, in the areas of facilitating more efficient use of traditional fuels and their substitution by modern ones, protecting human health from urban air pollution, and tackling climate change. The Bank is active in all regions, building the capacity of regulators through analytical work, technical assistance, and projects. Although work in environmentally sustainable development of energy resources is making reasonable short-term progress, the longer-term lending pipeline is still weak.

4.30 ***Renewable energy has high potential for WBG involvement.*** In the renewable energy field, the Bank and IFC are conducting pioneering work with clear allocation of responsibilities—the Bank concentrating on policy and institutional strengthening, IFC providing financing (see Annexes 14 to 16). The active portfolio of World Bank Group–GEF projects consists of 41 projects with a total value of \$3.3 billion, of which \$802 million is Bank and \$396 million is GEF financing. It is too early to evaluate these relatively recent initiatives, the first few of which are being completed this year.

4.31 ***Greenhouse Gas (GHG) emissions from IFC-financed power plants are insignificant.*** OEG found that the total GHG emission of the 22 fossil fuel-fired power plants approved in the 1990s and in IFC's portfolio as of December 31, 2001, is relatively insignificant (see Annex 17). Gas/naphtha-fired power plants have the least impact and represent 31 percent of IFC's installed capacity. Greater fuel efficiency has a direct impact on GHG reductions. IFC's portfolio reflects fuel choice based on availability, cost, and fuel balance in each country. Recent developments in non-hydro renewable energy indicate that commercially viable energy projects are encouraging and could be a growth area for IFC's power operations. Over the 1990s, IFC's renewable energy projects have been largely in hydro, where IFC financed a total capacity of 1000 MW. Approximately half of the total generating capacity insured by MIGA is in projects with renewable or clean energy sources (3,767 MW total, out of 7,446 MW).

4.32 OEG found that nearly 4 for every 5 IFC power projects have met or exceeded WBG environmental, health, and social (EHS) guidelines. This is better than IFC's all-sector performance. IFC monitors environmental performance until the IFC loan is repaid and the equity relationship is completed. OEU found that all eight evaluated MIGA power projects were in compliance with, or exceeded, MIGA EHS policies and guidelines. MIGA has the right to unilaterally terminate a guarantee if a project is found to be in noncompliance with these policies and guidelines. MIGA maintains a relationship with the project sponsor as long as the insurance policy is in force. The drivers for this good outcome include quality sponsors with strong commitments to the environment and the community;

appropriate and feasible technology choices; established plant-level Environmental Management Systems (EMS); and reasonable and enforced national environmental standards.

4.33 IFC's and MIGA's power projects in the 1990s provided viable solutions to power shortages. Additional generation capacity improved system reliability. This led to net environmental and social benefits through dispatch of environmentally cleaner power plants, minimization of industrial plant shutdowns, and providing the capacity to expand access. A system with sufficient new capacity has more flexibility to manage least-cost and environmentally responsible dispatch of its power plants. Better environmental management is possible, depending on the technologies, plant alternatives, and contractual constraints involved. Environmental outcomes are inferior when supply is constrained and system dispatch is poorly managed because older and more polluting capacity is called into longer periods of production.

5. Cross-cutting Findings

5.1 The analysis of project-level results and sector outcomes points to a number of crosscutting findings and lessons that should inform the implementation of the WBG's 2001 Energy Business Renewal Strategy (EBRS). The findings fall under two categories: those for designing better PSDE interventions; and others for improving WBG processes.

Toward Better-Designed Interventions

(a) More practical operational guidance to staff on WBG support for PSDE is required

5.2 The Bank needs to support its advice on reforms with financial help to meet the high costs of power sector transformation, which represents a new market for Bank lending. Yet, ironically, the volume of power lending has declined since the late-1990s. When the 1993 Policy was introduced, the Bank did not realize that power sector reform requires enormous technical and financial resources that few developing countries possess. For example, between \$50 and \$100 million were spent on technical assistance alone for reforming the power sectors in Orissa and Ukraine, respectively. The costs of restructuring the finances of bankrupt utilities, and undertaking investments essential to the reforms, amount to hundreds of millions of dollars—funds that many client countries do not have.

5.3 Moreover, the Bank's own budgeting process seriously underestimated the effort required to prepare, appraise and supervise operations that support power sector reform and PSDE. Yet there has been an enormous and rapid growth in the complexity of PSDE project design and implementation aspects because of the need to satisfy multiple and, sometimes, conflicting objectives and constituencies at the same time. These budget constraints (and the staff depletion that ensued since the mid-1990s) partly explain the Bank's inability to provide more financial support for power reforms in many of its client countries. Sector reform is a long-haul process lasting for well over a decade, and ways to ensure continuity of personnel and institutional memory have to be devised.

5.4 Promoting PSDE involves high risks. The design of WBG PSDE interventions must be improved by providing operational guidance to staff on how to promote PSDE under the current situation of scant investor interest, and on which reforms and sequencing should be followed, given specific regional, country, and sector situations. This guidance was absent from the generic 1993 Policy Paper. And although the large number of PSDE-related "Viewpoints," working papers, etc., issued by the Bank have been highly relevant and appreciated by staff, they have not been an adequate substitute, since such publications typically represent the views of the authors, and cannot be construed as being endorsed by Bank management. One important first step is to synthesize the multiple policy and strategy papers that are applicable to PSDE, and identify what specific roles the Bank, IFC, and MIGA

are expected to play. The WBG has developed and implemented a series of strategies and policies affecting the PSD aspects of its energy business. Including the 2002 PSD Strategy and the 2001 Energy Business Renewal Strategy, there are 8 policy and strategy statements within the past 9 years that are relevant to the WBG's PSDE programs.⁵⁵

5.5 With due attention to the trade-off between process controls and agility, within tolerable corporate risk levels, the Bank's Energy Sector Board, IFC, and MIGA, should provide WBG staff with better and more country-specific guidance on best, good, and bad practices in PSDE. Drawn from lessons of experience, this guidance should assist staff on: (i) how to read the country and investor community context; (ii) what criteria to follow in deciding when and how WBG involvement is likely to add value; and (iii) what the warning signs are for potential difficulties, and how these can be anticipated and built into the design of the WBG's advice and operations.

5.6 Operational guidance is particularly lacking in the following areas: (i) how to re-ignite private interest in developing country power sectors; (ii) how to do business with regard to balancing public and private investments, particularly in non-competitive markets where case-by-case decisions are required to assess whether public or private service provision is preferable, depending on how much of the risk for commercial performance can be shifted to the private sector; (iii) what sequence of reforms and PSDE interventions work best in particular country-sector situations, and what is within, and beyond, the WBG's control; (iv) how to incorporate the expansion of energy access to the poor, and environmental considerations beyond safeguard compliance, i.e., "do good" in addition to "do no harm," into the WBG's PSDE and sector reform agenda; and (v) how to achieve much stronger Bank, IFC and MIGA coordination and coherence within, and beyond, the Country Assistance Strategy (CAS) framework.

5.7 The development of this guidance should be truly joint and coordinated, and it should define a framework to fully analyze power reform and PSDE alternatives that is responsive to country conditions, needs, and institutional capacities. At the same time, this guidance should ensure environmental sustainability and align with the Bank's poverty reduction mission. This synthesis should be updated regularly to reflect new trends and priorities, particularly in a rapidly changing area like PSDE. For example, the WBG could do more in facilitating public-private partnerships and output-based aid through its diverse lending and advisory instruments. This could be enhanced through cross training of Bank, IFC, and MIGA staff involved in PSDE.

(b) PSDE Monitoring and Evaluation Needs to be Strengthened Considerably

5.8 ***Monitoring and evaluation of sector performance is weak.*** The assessment of PSDE outcomes—particularly its poverty reduction and environmental mainstreaming aspects—has to be seen in light of the poor data availability, as performance monitoring for the energy sector has been weak.⁵⁶ Bank reports tend to focus on inputs and outputs and provide little data on outcomes or impacts. Only the United Nations and the International Energy Agency (of the OECD) systematically update energy data, but these say very little about sector performance indicators such as access, reliability, and price. Moreover, very few countries have reached "advanced reform" status, and only a small number of the Bank Group's PSDE interventions have come to full fruition, such that outcomes attributable to PSDE can be measured. The EBRS itself has yet to mainstream PSDE indicators and launch the system for monitoring performance based on the EBRS objectives.

5.9 ***And the weak database is further being fragmented.*** As reforms redefine the role of government and multiply the number of actors through privatization and unbundling, performance data has become more fragmented, and much of it has become confidential, while most new regulators are too overwhelmed to collect even the minimum data required to start functioning. In 1999, QAG also found distorted performance ratings and significant M&E gaps during project supervision for 40 percent of the Bank's projects, as project teams continue to focus on inputs and

neglect outcomes. Project Status Reports fail to signal outcomes, and results are buried in reports that never enter the Bank's formal reporting structure. As early as 1994, OED already found that only 20 percent of energy projects in a study sample had effective M&E at approval.

5.10 The Bank has a clear priority to support the development of strong country client and internal capacities to monitor and evaluate sector reforms and PSDE interventions, including their impacts on poverty reduction and environmental sustainability. But country client M&E systems have not been well established, making it difficult to understand the country factors behind good PSDE performance vis-à-vis the EBRS benchmarks. Learning-by-doing as reforms and PSDE are implemented, the Bank runs the risk of perpetuating poorly designed interventions if the lessons learned are not quickly shared. Internally, the Bank's Energy Sector Board should provide clear guidance to staff on which part of the EBRS strategy should be pursued by which unit and in what subsector. The EBRS is a Bank Group-wide strategy covering the whole array of WBG instruments (including public sector lending) and the entire energy sector. Each of the four strategic priorities of the EBRS has five or six action plans, not all of which are applicable to PSDE. The WBG should identify specific action plans that are relevant to PSDE, develop success indicators, and track performance. A PSDE scorecard agreed by the Bank, IFC, and MIGA should be considered to enhance overall coordination, promote harmonization of internal incentives, and foster speaking in one voice to client countries, including analytical and advisory assistance.

(c) Country Factors Drive Successful Reforms and Good PSDE Performance

5.11 ***In designing PSDE interventions, it is important to build the country's ownership and leadership role.*** The ESMAP Reform Scorecard Study suggests that "reform is not a uniform process, but rather that it proceeds rapidly when conditions are favorable, and does not even start when conditions are unfavorable." OED's literature and portfolio reviews indicate that different approaches to PSDE reform apply to different countries, and approaches that worked well in one country did not always work as well in another. This reinforces the well-established evaluation finding about the importance of adapting to country conditions. For example, in LAC, the Bank mainly facilitated and responded to country priorities and did not determine the reform agenda or try to take the lead. In AFR, the poor PSDE portfolio performance, overall, apparently led to a retrenchment in the regional PSDE strategy to focus more closely on individual country conditions and readiness for reform. In SAR (India in particular), the focus has been on reforming states and the support for reform programs is being reoriented toward the distribution subsector. ECA provides the strongest example of country drivers: PSDE success only became possible when country commitment materialized after years of no results and unsatisfactory Bank operations.

5.12 ***Government commitment is of paramount importance.*** As found in studies by OED and others, important factors in the successful implementation of PSDE programs include focusing on a realistic set of priorities; establishing a clear sequence of steps; working with local champions for reform; and early successes in the reform process. Energy operations, however, are vulnerable to country risks, given the inherent "reform intensity" of these projects in countries with macroeconomic problems, weak institutions, or poor borrowing records with the Bank.⁵⁷ Political commitment to PSDE objectives is fickle, and can be eroded by elections, the lack of immediate results, macroeconomic crises, or a waning sense of urgency after crises have been weathered (often with aid money from the WBG and others). The political economy—not only aid money—explains the outcome of adjustment operations.

5.13 ***Constituency-building for reforms, when lacking, can threaten the sustainability of PSDE reforms.*** The literature review indicates that there is support for reforms if they are transparent and carried out competitively. However, despite the reform achievements in LAC, inadequate civil society participation has sometimes been a problem. In Chile and Peru, the power exchange markets have been criticized by observers for not representing a true market scheme: they claim the pools inhibit the entry of new players and limit competition.⁵⁸ Furthermore, government ownership of key

generation plants can still strongly influence dispatching and price, as in Peru.⁵⁹ Some countries may yet backslide as a result of public disillusionment with reform, changes in administration, and opposition by powerful stakeholders. A poll in Peru showed that 72 percent of Lima residents would like to see their public utility in electric power renationalized.⁶⁰ This declining popular support for privatization has made that program a target for the government's opponents, as shown by the riots in Arequipa in June 2001. Planned privatizations of distribution companies in Bolivia were cancelled early, partly because of political opposition by unions and local political leaders. Finally, further regulatory challenges will arise as markets integrate and cross-border trading develops. The continuing merger of companies at the regional level, the growing convergence of gas and electricity markets, and the withdrawal of major players have reduced the number of actors in the market, and may well be the biggest concern for the momentum of PSDE in WBG client areas.

(d) ESW/AAA Has Facilitated PSDE in Countries Committed to Reforms

5.14 Since the 1970s, the Bank's analytical and advisory assistance, including its subset of economic and sector work (ESW/AAA) have long been a mainstay in underpinning the Bank's country dialogue and operations. The Bank's ESW/AAA for PSDE shows a tremendous amount and diversity of products, as well as audiences (analytical papers by the Energy Sector Board; ESMAP studies; formal ESW and operational advice by the Regions and the networks for energy and private sector development networks; research by the Bank's Development Economics and Chief Economist Vice-Presidency (DEC); Public-Private Infrastructure Advisory Facility (PPIAF) country framework papers; World Bank Institute (WBI) training courses; OED evaluation studies; and technical assistance such as conferences, staff training and country workshops provided by these groups). The IFC has also provided 33 advisory operations during the study period. In the mid-1990s, the production of Bank ESW/AAA went through structural changes with the emergence of quick-turn around studies that provide more timely response to clients' requests for analysis and advice. ESW/AAA for PSDE reflected these Bank-wide structural changes with products becoming more diversified in scope and scale, ranging from traditional, Bank-driven core diagnostics work to informal, "just-in-time" policy notes, capacity building, and experts' meetings that are country-driven.

5.15 The Bank's ESW/AAA has facilitated the reform process in PSDE, but its contribution at the country level varies widely. Findings, based on selected country case studies, suggest that substantial ESW/AAA do not necessarily lead to better sector outcomes. Rather, it is a combination of "just-in-time" advice, leveraged by commitment from government and support from a broad-spectrum of civil society, that has facilitated PSDE reforms, as noted above. In *Mauritius*, based on OED's Performance Assessment Report (PAR), limited, but strategic, advice under GEF financing has substantially contributed to the emergence of private investments in bagasse cogeneration (see Box 4), despite cancellation of the associated Bank loan. In *Poland*, OED's PAR also indicates that: (i) the Bank's early ESW/AAA laid the groundwork for sector reforms and a competitive market; and (ii) subsequent loans and sectoral policy advice provided support for preparing and passing legislation to establish the Energy Regulatory Authority (ERA), and to restructure the energy enterprises.

Box 4. Mauritius—The Bank’s Advice Contributed to the Success of Private Power Generation from Bagasse

The Mauritius Sugar Energy Development Project supported private power generation based on bagasse as a substitute for imported fuels, with funding from the Global Environment Facility (GEF). There was a strong, general consensus among both private and public evaluation respondents that, although the Bank’s contribution solely in financing terms was small and its involvement became minimal at completion, the Bank’s advisory and “honest broker” role was critical and most valuable in facilitating the launching and implementation of the country’s Bagasse Energy Development Program. Moreover, the Bank’s non-financial AAA during supervision missions related to PSDE, as well as the ESW on the theory and best practices for energy pricing based on the avoided-cost principle, were often cited by stakeholders as specific examples of the Bank’s high value-added.

5.16 In the *Philippines*, by way of contrast, a significant number of ESW/AAA in PSDE has been produced, yet the advice largely went unheeded. While Bank’s support for the privatization of the national power company facilitated the passage of a power reform bill after a drawn out process, lack of a “buy-in” from a broad-based constituency further put on hold reforms in PSDE (this has progressed recently, with the government approval of the National Power Corporation privatization plan in October 2002). In *Indonesia*, Bank staff were actively involved in drafting the power restructuring policy that was adopted by the post-Suharto government and later paved the way for ADB’s program loan and formed the basis for the new electric power policy. The reform process, however, lost momentum with the departure of the Minister of Energy, who championed the restructuring policy, and due to the political instability that characterized the Wahid presidency. The Bank’s influence in Indonesia’s power sector reforms soon diminished. A recent OED review⁶¹ concluded that the Bank should not have closely associated itself with the restructuring policy, and that the policy paper would have benefited from more deliberation and broad-based consultation from various stakeholders.

5.17 A system of monitoring and evaluation (M&E) is needed to better measure the impact of ESW/AAA for PSDE. Such a system would enable better coordination and selectivity in ESW/AAA to meet EBR’s objectives, and thus promote greater effectiveness in PSDE outcomes and impacts. Moreover, lessons learned through M&E could help build the Bank’s PSDE knowledge base, thus better informing future ESW/AAA design, and the reform sequencing and choice of instruments appropriate to specific country conditions. However, there is no existing Bank-wide codification of ESW/AAA that would allow for systematic monitoring within and across sectors and networks. This difficulty is heightened since ESW/AAA products for PSDE are becoming more diverse and decentralized and, thus, more intractable, not only in volume and cost, but also in quality. Further, there is no Bank-wide evaluative framework for measuring impact. OED, OPCS, and QAG have recently assessed ESW, but there is no agreement yet on Bank-wide criteria for evaluating impact.

5.18 IFC’s advisory operations likewise played an important role in promoting PSDE, especially in the distribution and transmission subsectors. IFC’s advisory operations in power, in the 1990s, were conducted largely through: (i) stand-alone advisory engagements (13 operations); and (ii) donor-funded technical assistance (20 operations). The focus of these 13 operations has been mainly on structuring and executing a privatization strategy. LAC was the dominant region, with 7 out of 13 advisory operations. Of the 13 stand-alone advisory operations in power in the 1990s, 7 privatization advisory assignments were successfully completed, resulting in the mobilization of about \$2 billion private sector investments which, in turn, led to expansion and efficiency improvements of privatized facilities. Through its bilateral and multilateral donor-funded technical assistance (TATF) operations, IFC was able to expand the reach of its advisory operations in power since 1988. Assistance provided under this program includes feasibility and project identification studies, studies of enabling environment for PSD, training and capacity building for private businesses and government agencies, privatization advice, post-privatization support, and reforms of government regulations and policies affecting the private sector. Four out of 20 TATF operations are in transition economies in ECA

(Russia, Romania, Hungary, and Tajikistan) that started opening their power sectors to private participation.

(e) PSDE Policy and Operations are Country-Specific “Works in Progress”

5.19 There is no “one-size-fits-all” model for power reforms and PSDE. Country specificity is important because the Bank itself was, and still, is “learning-by-doing” (or “experimenting,” based on the task manager’s survey). Based on OED’s literature and portfolio reviews, the Bank does not seem to have followed a consistent PSDE reform strategy from the outset of the 1990s. The Bank was reactive to the unanticipated large, private capital flows that preceded its 1993 Policy; while some regions were already supporting PSDE before the enunciation of the policy, others were slower to respond to the policy’s reform and “commitment lending” agenda. For IFC, the new international environment provided substantial investment opportunities in LAC, SAR, and EAP, where it was among the pioneers. Despite its lack of prior experience, the Bank supported all seven reform areas in a large number of countries (68) by the mid-1990s, frequently using the experience of the United Kingdom as a model for its advice, which was itself a “work-in-progress”. “Learning-by-doing” worked in a few cases, as in El Salvador, but it did not work in many others, as in the Ukraine. And there is always the threat of backsliding, following initial success, as in the Bank’s support for distribution sector reforms in Orissa, India.

5.20 Ukraine is an example of how PSDE can fail when it is imposed from the outside as a one-time solution rather than a “work-in-progress” (Box 5).

Box 5. Ukraine —Pushing for Unbundling in the Wrong Environment

The Electricity Market Development Loan to Ukraine, approved in 1997, was designed to support improvements in the power sector, including development of a competitive power pool based on the British model of unbundling. The project’s reform objectives—improved collection levels, access to working capital, metering facilities, and financial management—were to increase the quality and reduce the cost of electricity supply by developing a competitive electric power market and operating conditions that would encourage electric power companies to seek full cost recovery.

Delays in ratification slowed project implementation and, in the meantime, political interference prevented improvement in payment collections—collection levels actually declined. This prevented full cost recovery for the generating companies, which were also burdened with the requirement of maintaining minimum fuel stocks throughout the year. Subsidies to power plants and non-payments by distributors exacerbated the problem.

The loan was suspended in July 1997 due both to unsatisfactory financial performance of the entire power sector and to a new government prohibition on the increase in electricity tariffs for household consumers. Only \$76.4 million was disbursed, which paid for fuel stocks. The loan was cancelled at government request in 1999 due to the impact of the Russian financial crisis on the Ukrainian economy.

Based on the ICR, a key lesson from the project is that there is little merit in pursuing comprehensive power sector reform policies (legislation, regulation, unbundling, competition, privatization, regulation) in a country suffering a major economic crisis. The project shows that in an economy that was barter-based, with salaries and pensions in arrears, and where the government condoned the culture of non-payment, there was no way to make consumers to pay for electricity in cash. In such an environment, the introduction of an advanced model of a competitive power market was bound to be a losing proposition. Project objectives should have been more modest and targeted to improving well-delineated technical, institutional, and financial problems.

5.21 *IPPs have an important role to play in PSDE.* An example of the importance of country-sector conditions is the WBG’s experience with independent power producers (IPPs) in countries where reforms have not taken root. Appropriately structured IPPs provided timely and cost-effective solutions to chronic supply shortages. They relieved the public sector of many of the project risks, subsidies, and financial obligations that it would have assumed had it built and operated new

capacities as it had done in the past. They mobilized financing and enabled capacity to be added to meet demand beyond what governments could have done on their own. They served as an interim step in developing fully competitive power exchange markets. However, in a few countries (Pakistan and the Philippines), the success of IPPs in resolving power crises had the effect of relieving pressure on leadership and policymakers for needed reforms and provision of capacity downstream of generation, particularly in T&D. In Pakistan, the failure to address downstream reform and capacity provision, coupled with weak system planning, resulted in under-utilization of the IPP capacity, even as demand remained unmet.

5.22 While early entrant IPPs are lower-cost, compared to the full cost of power generation in the public sector, they are largely higher cost relative to subsequent IPPs. This pattern is typical in most new products markets. Early entrant IPPs assumed higher risks and, in most cases, the government could not attract viable alternative proposals. The pricing of these IPPs reflected the high-risk associated with pioneering investments in sectors new to private capital where the business climate and regulatory environments were, at best, uncertain. Subsequently, average output prices fell as developers and equipment suppliers competed for business following the initial success of the early entrants. Countries that engaged in transparent and competitive bidding processes, on the whole, got lower prices and better terms.

5.23 But the private sector underestimated the risks associated with IPPs. Contracts run for 15 years or so, and many unforeseen economic, political, and market developments could occur over such extended period. By 1998, economic crises undermined the sustainability of long-term Power Purchase Agreements (PPAs) in East Asia (Thailand and Indonesia), in South Asia (India and Pakistan), and a few LAC countries. *First*, IPPs were underutilized when actual demand growth fell below government projections. Official demand-supply projections that attracted private sector participation and served as the government's basis for determining the required IPP capacity, proved unrealistic when country crises struck, in particular without the accompanying T&D reforms, and/or when government refused to shut down old, inefficient, subsidized plants. *Second*, in markets where dispatch is under the unilateral control of a state agency, dispatch rules appear to have been biased in favor of state-owned, subsidized generation plants with little regard to their plant efficiency. *Third*, in countries where T&D reforms have not yet taken root, IPPs were under-utilized due to bottlenecks in T&D. At entry, IPP financiers had assumed that host governments would address the T&D bottleneck by pursuing the necessary reforms. *Fourth*, IPPs in some countries also became highly politicized and were easy targets to accusations of corruption and high-costs (relative to subsidized and/or older state sector units), especially those that had been implemented under a previous political regime. In addition, consumers resisted the elimination of subsidies on electricity as part of the reform process and incorrectly attributed the resulting tariff increase to IPPs.

5.24 In the context of severe power shortages at entry, IPPs were seen as a "win-win" solution for the government, the consumers, and the private financiers. This was evident in IFC evaluation findings, particularly in power crisis relief situations and/or where conditions allowed their productive capacity to be realized. But in a depressed demand situation, contractual terms of the early IPPs were perceived, in hindsight, to unfairly favor investors and lenders over offtakers. While accusations of corruption have not been proven, many IPP contracts in these countries have been renegotiated under pressure, and IPPs have accepted terms that would not have been viable at entry. A loss-sharing solution of lowering tariffs in exchange for an extension of the PPA term has been the most common approach and successfully used in Pakistan, Thailand, and Guatemala. The IPP shareholders in these situations have realized returns below what they expected or would have found acceptable at entry. In a few cases, PPAs were cancelled, or remain in dispute, such as in Indonesia and India.

5.25 The WBG supported IPPs in the 1990s; indeed, IFC was a pioneer in financing IPPs, which currently constitute the majority of its power portfolio. At the beginning of the IPP era, in the late 1980s, the Bank had reservations about the compatibility of the private sector profit objectives and

the public sector's objective of providing reliable low-cost power supply. The Bank subsequently embraced the trend and in a few cases (Pakistan and Cote d'Ivoire), provided financial support to IPPs through on-lending instruments and guarantees. Because of the lack of developing-country models and experience, the WBG learned IPPs by doing them, and derived lessons over the years. A few of the first WBG-supported IPPs were among those that have encountered allegations of less than arm's-length contractual arrangements. The WBG had become more selective in its support for IPPs, turning down proposals (in India, Indonesia, and in the Philippines) that it considered uncompetitive, too risky, not transparently awarded, or disadvantageous to the country.

5.26 Recent problems with IPPs in several countries have led many developers to conclude that the rates of return in power generation in developing countries have become too low relative to the risks that have emerged and the more advantageous risk/reward profiles available in developed countries. This has coincided with a general withdrawal of international financiers from developing countries since 1998, partly in reaction to unpredictable, but recurring country crises. Unsustainable long-term PPAs with state-owned offtakers are appearing to be riskier than transparently and competitively chosen merchant plants in fully functioning power markets. These have caused a reversal of the positive sentiments of international financiers and sponsors toward private power generation in developing countries. To counter this trend, the WBG needs to work with developers, lenders, policymakers, and rate-payer stakeholders to determine the necessary country and sector reforms to make IPPs in developing countries attractive and sustainable. This should minimize the risk of going through hostile renegotiations. The WBG should emphasize the need for: (a) accompanying reforms in T&D and dispatch rules; (b) more realistic demand-supply projections that will include reserve capacity, and be prepared by both government planners and the private sector; (c) a balancing of investments among generation, transmission, and distribution, to meet demand growth, extend service to the poor, and minimize the risk of imbalance system capacity; (d) a reasonable action plan and time-based program to build an enabling environment for competitive and fully functioning power exchange markets that are efficient and able to remunerate capital appropriately within a risk-sharing framework that can attract appropriate financing; and (e) a reform framework that recognizes that market forces alone cannot ensure timely capacity build-up, i.e., a combination of regulation and private sector promotion initiatives is essential for long-term demand/supply equilibrium.

(f) Reform Steps are Means, Not Ends

5.27 Evidence from the literature and portfolio reviews indicates that a purely public sector ownership and monopoly structure should not be a permanent goal. But it is important to sequence reform steps such that they serve as tools and do not become ends in themselves. The Bank's approach to sector reform, as it evolved in the 1990s, went beyond what was mandated by the 1993 Policy. The Policy promoted commercialization and corporatization before privatization, as a means to introduce competition and innovation, based mainly on the reforms in Chile, England, and Wales, which were the only experiences available at that time. Most power sectors of Bank client countries, however, showed little prospect for reaching commercial standards because of the inefficiencies from state ownership and poor governance. Thus, subsequent to the 1993 Policy, and without enunciating it as a major strategic change, the Bank mostly advocated privatization (as well as private participation through management contracts) as a means to achieving commercialization.

5.28 The evidence on the timing and sequencing of reforms and PSDE is ambiguous. There are country lessons where "leapfrogging" to privatization as a means to achieve commercialization has led to positive sector change (Kazakhstan and Central European countries). Even where this approach was not wholly successful, service quality and coverage are still typically better than they would have been otherwise, as evidenced by adjacent utilities in the same country that were not privatized (Georgia and the state of Orissa in India). But there are also clear examples of negative consequences (Ukraine) and the alternative reform approach has also shown both successful and unsuccessful results. Substantial

efficiency gains were achieved in some countries where good public governance and the right tariff structures were put in place first (some ECA countries), but there are also many situations when decades of Bank support for the reform of public monopolies had little or no success (many AFR and some SAR countries). Two examples are provided below on issues that arise when reform steps—regulatory improvements and unbundling—become ends in themselves. The WBG should not dogmatically prescribe a checklist of minimum pre-conditions for PSD and privatization, but neither is it feasible to simply let markets and investor appetite decide alone. In cases where intermediate steps to reform the public sector are required, PSDE must be a clear long-term goal. The WBG’s clients are too diverse to follow a single blueprint for reform sequencing, thus underlining the importance of country specificity.

5.29 *Regulatory improvements* are essential means toward achieving PSDE reforms. Bank lending operations provided assistance for the establishment of regulatory bodies, but these proved to be a slow and lengthy capacity-building exercise and became ends in themselves. Based on the portfolio review, there are few successful examples, most of them recently in Latin America. In most countries there have been long delays in setting up adequate regulatory mechanisms, even where there was entry of private operators or IPPs (the absence of effective retail-level regulation was one factor precipitating PPA renegotiations with IPPs in several countries). Furthermore, there are many instances of ineffective regulators due to poor legislation, lack of autonomy, weak technical skills, and politicization of decisions.

5.30 Lack of regulatory skills, which affects both the regulatory agencies and the regulated entities, is particularly acute in small countries and in all of Sub-Saharan Africa, excluding South Africa, based on OED’s literature and portfolio reviews. Outside Latin America, where electricity and gas often have the same regulator, as in Colombia, Chile, and Mexico, local empire building and the existence of too many regulators (such as separate electric power, gas, telecommunications, and water regulators) often exacerbated the dispersion of scarce regulatory expertise.⁶² While there has been considerable debate within the Bank about the appropriateness of multi-sectoral regulation, interviewees suggest that the Bank may have contributed to this situation through lack of cross-sectoral coordination among project staff. Even with “umbrella” (multi-sectoral) regulators, effective and credible regulation will be difficult in many of the Bank’s borrowers for many years to come, which has important implications for the near-term viability of PSDE and WBG activities in these environments. One concrete step to strengthen multi-sectoral approaches to regulation within the Bank would be to organize the network side of power supply with the network side of other infrastructure services in order to capture pooled knowledge about regulation, industry structure, market structure and trading arrangements, and privatization experiences, with a view to adapting this knowledge in suitable country situations.

5.31 Ideally, regulators should be financed from a levy on consumers that is paid directly to the regulator, and should have separate employer status from the public service, but experience shows a widespread reluctance to give the regulators such autonomy. Most regulators are financially dependent on the government budget. This limits their autonomy as well their financial resources to hire expertise as staff or consultants. Few regulatory bodies can pay good salaries⁶³ and attract the right talent. Most are under-funded and reliant on donor support for initial startup costs, staff training, and consultants. Ministers and technocrats are rarely willing to cede authority,⁶⁴ so pronouncements of support to independent regulation can be less than genuine commitment. Many regulated power sector entities are still publicly owned, so the regulator lacks clout to enforce decisions. Moreover, tariffs remain a politically sensitive matter virtually everywhere, making it unrealistic that such decisions can be made on a technocratic basis. Ultimately, rate hikes need to be endorsed at the ministerial or cabinet level⁶⁵ in the majority of the Bank’s borrowers. Politically motivated decisions in some countries⁶⁶ have reduced the effectiveness of even technically capable regulatory agencies. This mindset is very hard to change, but doing so is crucial to the long-term viability of independent regulation.

5.32 The Bank’s experience with *unbundling* also offers the lesson of keeping reforms as means, and not ends. Sector unbundling, of generation, transmission, and distribution, has been considered a linchpin of the reform process, as it is the gateway to establishing competitive markets in generation and

distribution. Despite widespread adoption of the many variants of this concept in a wide range of developed and developing countries, it remains a work in progress. International experience to date indicates that a variety of approaches are being tried with highly mixed results. To achieve the potential benefits of unbundling requires the willingness and ability to move to the next steps in promoting private, competitive markets in generation and distribution, which in turn requires an understanding of property rights, an adequate legal framework and dispute resolution mechanisms, smoothly functioning capital markets, freedom of entry and exit for investments, and highly developed political and economic institutions.⁶⁷ Lessons of experience (as discussed in the draft ECA study discussed below) include the need to assess the readiness of the sector to move on to next steps (unbundling as a means, not an end in itself), and the assessment of market size, as a potential limitation to unbundling.

5.33 In the late-1990s and until recently, key donors (including the WBG) were perceived to profess that unbundling, privatization, and the establishment of a competitive power pool was the best way to achieve power sector reforms, almost regardless of the size of the countries and their utilities, their level of development, and the extent of disarray in the sector. A recent internal review in the ECA region of experience with power sector reform and private sector participation in the 1990s, draws some important conclusions that also appear to be valid elsewhere, particularly in Africa. Both these regions are characterized by weak commercial performance by their utilities, macroeconomic instability, low and/or declining incomes, poor governance, and unattractive private investor environments. In ECA, Bank operations emphasized unbundling the sector, privatizing distribution and generation, and introducing competition and consumer choice. These operations had the objectives of bringing in foreign private resources for sector rehabilitation and possible expansion, improving managerial competence, and upgrading sector efficiency.

5.34 The ECA review reveals that the application of a standard, sophisticated model in all situations did not produce the desired results. It concludes that the push for unbundling and privatization was premature in ECA and that the attempt to leap from a totally non-commercial state-owned entity run like a government department to private commercial utilities did not work. In the Caucasus and Central Asia regions, experience to date with unbundling and privatization has either resulted in a lack of investor interest, low offer prices for assets, disinvestments by the private sector, political opposition, and stalled reforms. In many countries, investor fatigue has set in. The response to invitations for privatization has become so limited as to negate the concept of competition, and there are examples of investors withdrawing from investments already made. Sector unbundling in Former Soviet Union states (like Armenia, Georgia, Kazakhstan, and Ukraine) actually exacerbated payments problems because distribution utilities retained whatever cash they collected and starved the upstream suppliers. The negative impacts of pushing prematurely can be far-reaching, as in the Ukraine (see Box 5 above, page 42). In many of the poorest, but not necessarily small countries (Kyrgyzstan), unbundling of distribution along geographical lines is rendered more difficult by the existence of unviable isolated grids serving small urban centers or large numbers of rural consumers with very low average electricity usage.

5.35 In retrospect, based on the ECA experience, it was unrealistic to believe that restructuring and privatization could somehow overcome legal, political, attitudinal, and payment obstacles and be immune to destabilizing macroeconomic factors. The key lesson is that improving commercial performance, corporate and sectoral governance are primary, regardless of sector structures and ownership. Whether privatization is the best immediate option to achieve these goals depends on country circumstances.

5.36 Unbundling regardless of market size and country factors is questionable. The literature suggests that in most of the Bank's smallest borrowers, particularly in Africa, unbundling is unlikely to facilitate the entry of private investors, particularly foreign ones. Such firms generally have minimum size requirements for them to consider entering new markets. In addition, there are economies of scale in management and in commercial practices, such as billing and collection. No

African utility has yet been both unbundled and the resulting “segments” privatized, although a few have been unbundled (Uganda, Kenya) and a handful privatized. Viable distribution systems need economies of scale and excessive fragmentation does not work (Armenia, Georgia, Moldova). Reconcentration into larger entities has become necessary in several ECA countries.

5.37 Notwithstanding the foregoing findings from ECA, there is also evidence from other regions that sector performance in countries that actually unbundled and privatized did improve, at times to a point of sound commercial performance. Private participation has led to better pricing, lower losses, higher collections, and greater access (as discussed earlier), and private participation also had a role in the cases where state-owned monopolies have been turned around from high losses and low collection rates. Unbundling in small countries can occasionally succeed, as the Bank’s experience in El Salvador has shown. And unbundling has not always been recommended by the WBG. EdM (Mali), a combined power and water utility with about 80,000 consumers, has recently been successfully privatized in its existing form. SONEL of Cameroon, though a much larger utility with more than 400,000 customers, was recently privatized as an integrated company on IFC advice, reflecting investor and government preference and the wish to avoid “orphaning” some or all of the distribution system in the event of unbundling.

(g) Reforms in Transmission and Distribution Are as Important as Reforms in Generation

5.38 Improvements in the distribution subsector—better cash collections, loss reduction, good governance, better targeting of subsidies, and distribution privatization—deserve more intensive reform efforts and investment support by governments and the WBG alike. The factors responsible for increasing private participation in the power sector of developing countries (power shortages, technological change, and search for markets by equipment makers) have emphasized generation over transmission and distribution. Swept by the market wave, the WBG’s attention to PSDE also concentrated originally in the generation subsector. However, it has become clear that private investments in generation are vulnerable to financial problems in the distribution end of the industry and local vested interests defending the status quo.

5.39 The importance of distribution reforms has been highlighted in the section on IPPs: liberalizing the generation subsector, without implementing a corresponding reform package to improve distribution, can impair the effectiveness of the overall reform program. It is now widely recognized that achieving positive sector outcomes will depend on devising workable solutions to the complex business of retailing electricity.⁶⁸ Promoting PSDE in non-commercial distribution entities has been very difficult. To attract investors and sustain private sector involvement in distribution, experience shows that: (i) the government should clearly state its reform policy and back it up by passing the enabling legislation; (ii) the government should demonstrate its commitment to improved governance, notably through support for law and order, anti-theft and bill collection measures, and restraints from interference in regulatory processes; (iii) the regulatory agency should have clear functional independence, regulatory rules that provide a degree of certainty on tariff adjustments, and processes that are perceived as fair and transparent; and (iv) power suppliers should have independent boards and financial management.

5.40 South Asia offers a powerful illustration of the importance of addressing the commercial weaknesses in power distribution as early as possible. The sustainability of private investment in generation depends crucially on collecting the cash from the final consumer. Realization of the overwhelming importance of well-run distribution systems was slow to emerge, but is now widely recognized, following the virtual bankruptcy of WAPDA in Pakistan⁶⁹ and the SEB in Maharashtra (India),⁷⁰ triggered by their difficulty in meeting payments to IPPs. In Bangladesh, the main utility, BPDB, also suffers from high energy losses of about 20 percent,⁷¹ has weak revenue collections and lost \$55 million on average during the second half of the 1990s. Payments to IPPs have been kept up only by accumulating arrears to state-owned gas suppliers and by non-payment of debt service to the government.

5.41 There are no simple recipes for the reform of power distribution because of the large scale, labor intensity, political opposition, vested interests, and corruption present in this sector. New ways are being developed to increase private participation in distribution, such as the allocation of risks beyond the investors' control for the transition period, the design of the transaction strategy, management of policy risk, and the phasing of privatization. The results of these initiatives need to be monitored, but so far, success stories are few and most of them are in Latin America (see Table 6). No comparable progress has occurred in any of the other regions. The exception, noted earlier, is Côte d'Ivoire, where (CIE) achieved major improvements in coverage, service, and collections.

Table 6. Performance Improvement of South American Electricity Distribution Companies⁷²

<i>Country Distribution company</i>	<i>Peru Luz del Sur</i>	<i>Argentina Edesur</i>	<i>Argentina Edenor</i>	<i>Chile Chilectra</i>
Year privatized	1994	1992	1992	1987
Energy sales (GWh/year)	+19%	+79%	+82%	+26%
Energy losses (%)	-50%	-68%	-63%	-70%
Number of employees	-43%	-60%	-63%	-9%
Customers per employee	+135%	+180%	+215%	+37%
Net receivables (days)	-27%	-38%	n.a.	-68%
Provisions for bad debts (% sales)	-65%	-35%	n.a.	-88%

Note: Performance improvement measured from date of privatization until 1998 in terms of performance relative to the year of privatization.

Toward Improving WBG Processes

5.42 The sins of commission—as well as omission—discussed in the preceding sections highlight the need for the senior management of the Bank Group to encourage operational innovations that would help the WBG achieve greater consistency between its PSDE goals and its business directions. In addition to designing better interventions, WBG processes need to adapt to the rapidly changing environment in the electric power sector. This study has identified areas where more could be done regarding the degree of coordination among the Bank Group institutions and, in some respects, coordination within those institutions. For example, during the 1990s, IFC's electric power investment accelerated, by way of financing projects in power sectors open to private capital in different stages of the country's power reforms. IFC's power investments in the 1990s showed above average performance ratings. For the Bank, however, sector reform achievements were low (except in LAC and some ECA countries), and the quality of reform efforts was unsatisfactory. Moreover, in a few cases where internal discussion among task managers was not conducted, the WBG sent conflicting signals to client countries and sponsors, and nonaligned incentive structures led to competition among WBG instruments (discussed below). These contrasting Bank and IFC assessments reflect underlying differences between the Bank and IFC that need to be better coordinated within the context of the Country Assistance Strategy (CAS) process, and through cross-training to promote a better understanding between the Bank and IFC. At the same time, proactivity and flexibility are also required to respond to rapidly evolving country-sector conditions and opportunities for PSDE, which are not always foreseeable in the CAS.

(h) Country Assistance Strategies Treat PSDE Only Briefly, If At All

5.43 The WBG needs to improve the integration of its PSDE objectives within the CAS framework, based on a review of CAS Retrospectives and background papers for the energy sector strategy paper. Moreover, each CAS should discuss whether Bank financial or analytical support to PSDE is needed, and how the contributions of the Bank, IFC, and MIGA can be best combined, even when the principle of selectivity may lead the WBG to conclude that no intervention is desirable. Most CASs treat PSD in general, and PSDE in particular, very briefly. The 2000 CAS Retrospective notes that only 60 percent of CASs have a separate section on the role of the private sector, while the

rest only make passing references to privatization and competition. Only about a fourth of CASs contain a detailed discussion of private sector issues.

5.44 CASs prepared jointly by the Bank and IFC are generally more thorough in their treatment of PSDE than Bank-only CASs. For example, the 2002 CAS Retrospective finds that 100 percent of Bank-IFC joint CASs had a PSD rating of satisfactory or better, while only 61 percent of the non-joint CASs were rated satisfactory. In other words, all of the CASs rated less than fully satisfactory for their treatment of PSD issues were non-joint CASs.

5.45 The CAS framework is the most logical context within which to address Bank Group-wide issues related to reform sequencing, IPPs, and the overall regulatory framework. In the joint 1999 Philippine CAS, for example, PSDE issues were considerably discussed in two separate sections. IFC's roles and strategies for PSD in the Philippines with a focus on the electric power sector were also highlighted. The same is true for the joint 2001 India CAS, where support of the PSDE agenda was stressed, and IFC's PSDE priorities in India were likewise discussed. In contrast, the Bank-only CAS for Russia (1999), while it had a section on PSD, did not address PSDE issues, despite the critical importance of the energy sector in Russia's fiscal balances.

(i) Bank Group Instruments Sometimes Compete with Each Other

5.46 Competition among alternative financing mechanisms offered by the Bank (loans, credit lines such as Private Sector Energy Development Funds, credits, partial risk guarantees) and IFC (equity investments, loans) have emerged in a few countries (Bangladesh, Sri Lanka). This is the logical consequence of private sponsors searching for the most appropriate project financing package. The WBG's PSD intervention should be along the lines of the PSD Strategy of April 2002⁷³ which states, "the broad division of labor in the WBG with regard to PSD is as follows: IBRD/IDA focus on investment climate and related institution building, improvements of governance, legal and regulatory systems, financial sector policies and public financing. IFC pursues demonstration projects that promote the credibility of government policies, provides additional service in local markets and provides political risk protection to co-financiers... MIGA provides focused political risk guarantees, institution building, and investment promotion assistance..." Financing for PSDE projects should adhere to the principle of market first, IFC/MIGA instruments second, and World Bank (through guarantee and on-lending instruments) third. With respect to PSDE advisory, the joint World Bank/IFC Private Sector Advisory Department, established in 2000, should facilitate a smooth coordination with the World Bank focusing at the sector level (while being informed by IFC) and IFC at the transaction level.

5.47 Competition could also arise within the Bank, between lending and partial risk guarantee instruments, as well as between advisory and technical assistance of the Bank and IFC. While these conflicts are partly the result of bureaucratic tussles between regional and central departments, the right venue for instrument selection and deciding WBG interventions is clearly the CAS. The WBG could also develop a mechanism for such conflicts that could go beyond the CAS.

(j) Possible Conflicts of Interest Should be Avoided

5.48 Warning signals have emerged for potential for conflicts of interest not only between the Bank and the IFC, but also within each member of the WBG. Not many cases of actual conflict have been found, but it is important to flag this potential, which arises mostly because of the institutions' involvement in both the legal and regulatory environment and the financing of specific private sector projects whose financial returns are affected by that environment.

5.49 Within the Bank, projects and analytical work in several countries have focused on improving the legal and regulatory framework, but have also provided financing for private sector power projects through credit lines and/or partial risk guarantees (Pakistan, Côte d'Ivoire). While the Bank has no

financial interest (or risk) in the specific subprojects it financed because of the sovereign guarantee, it does have a reputational risk related to their performance. Thus, critics may argue that the Bank's advice and support on the legal and regulatory framework may be biased to support the subprojects indirectly financed by the Bank. Moreover, when a partial risk guarantee is involved, the Bank's financial involvement, and risk, is more directly linked to the subproject's performance, even with the government's counter-guarantee.

5.50 A specific example of the appearance of conflict of interest is the advice regarding IPPs: while the Bank is fully justified in arguing for a country-wide approach to new capacity generation through IPPs, considering the macroeconomic impact of these projects, the advice regarding a limit on approval of new IPPs can be construed by the sponsors as an attempt by the Bank to limit the market to protect the profitability of the IPPs it has already financed.

5.51 Another example is the WBG's inability to act as an "honest broker" in disputes involving claims affecting some IPPs with Bank and IFC financing and others without, or more generally, in all disputes between governments and IPPs, including those when the private projects have Bank (sub)loans or partial risk guarantees. While a possible way to address this dilemma would be to impose a more strict specialization between the Bank and the IFC in their strategic involvement in PSDE (with the Bank limited to assistance regarding the legal and regulatory framework, but not on specific subprojects), such an approach would not be consistent with the current rationale for Bank partial risk guarantees.

5.52 Between the Bank and IFC, the potential for conflict of interest emerges from a parallel set of circumstances—the Bank's support for legal and regulatory framework reforms affecting the financial and overall performance of IFC-supported private sector projects. With a clear division of labor, and clear strategic specialization, together with the continued enforcement of the "firewall" between the respective units in the Bank and IFC, the potential for conflict of interest can be minimized, but it will continue to require vigilance and risk management. Also, within IFC there is potential for conflict of interest between the advisory and investment functions. IFC mitigates this by locating these operations in different departments.

6. Recommendations

The Approach Paper for this study indicates that its objective is to inform the implementation of the Bank Group's Energy Business Renewal Strategy (EBRS). PSDE has delivered results where it was properly implemented, and the WBG should continue to support such interventions. The WBG can play a facilitating role in rekindling private sector interest in the electric power sector by filling the financing gaps with increased advice and lending support. But it needs to do so selectively, i.e., only in countries genuinely committed to a long-term reform agenda. Based on the evaluation evidence and findings, the study recommends the following:

a) On an urgent basis, the WBG should provide operational guidance to WBG staff on when and how to continue promoting PSDE under the current situation of heightened macroeconomic and political risks, and scant investor interest. Such guidance should be grounded on the Bank's recently enacted PSD strategy.

- The Bank's Energy and Mining Sector Board, in close consultation with the Private Sector Development Board, should provide WBG staff with updated and more practical operational guidance for pursuing PSDE, based on what works best, in terms of reform packages and their sequencing, given particular country-sector situations, needs, and institutional

capacities. Best practices can be developed for a range of most frequently observed country attributes. [paragraphs 5.2 to 5.5]

- The development of this guidance should be truly joint and coordinated among the Bank, IFC, and MIGA, and it should define a framework to fully analyze PSDE alternatives that ensure environmental sustainability and align with the WBG's poverty reduction mission. [paragraph 5.5]
- WBG senior management should clarify the roles of the Bank, IFC, and MIGA, in promoting PSDE, particularly in terms of increased financial and advisory support. [paragraphs 5.4 and 5.43 to 5.49]

b) In its future PSDE interventions, the WBG should give greater emphasis to the mainstreaming of poverty reduction and environmental objectives (in addition to its traditional macro-fiscal and sector efficiency objectives), which are at the core of the WBG's overall energy strategy.

- The WBG should focus more on reforming and facilitating private investments in the distribution subsector, which will require actions to improve cash collections, reduce losses, address corruption, achieve better targeting of subsidies, and privatize distribution when circumstances permit. [paragraphs 5.35 to 5.38]
- The WBG should maximize the involvement of the local private sector in small-scale and/or decentralized projects, which will require innovative approaches and much better cross-sectoral integration within the Bank, and between the Bank, IFC, and MIGA. [paragraph 4.26]

c) The WBG should encourage operational innovations to ensure greater consistency between its practices and instruments, and its PSDE goals as they evolve.

- The WBG needs to improve the coordination of the various units active in PSDE. To this end, it should pursue better integration of its PSDE objectives within the CAS framework (including in non-joint CASs) and Poverty Reduction Strategy Papers (PRSPs). [paragraphs 5.39 to 5.42]
- The Bank, IFC, and MIGA management should support initiative and flexibility in PSDE operations and AAA, in order to better respond to rapidly changing country-sector conditions and opportunities that are not always foreseeable in the CAS. Through its diverse lending and advisory instruments, the WBG should promote more public-private partnerships and promising innovations, such as pro-poor design of reforms and output-based aid schemes, for which robust monitoring and evaluation systems are essential. [paragraph 5.5]
- The WBG should develop performance indicators and related internal systems, as well as help in strengthening borrower capacities, including project funding, to monitor and evaluate the achievements and impacts of its PSDE interventions. These M&E efforts should be keyed to the EBRS and other relevant strategy and policy objectives, especially in the relatively neglected areas of helping the poor and mainstreaming environmental sustainability. [paragraphs 5.6 to 5.8]

Endnotes

1. Lamech, R. and Saeed, K. (2002) 'Private Power Investors in Developing Countries: Survey 2002 – Preliminary Findings', presentation at the World Bank Energy Forum 2002, June 5, Washington D.C.: The World Bank; Lamech, R. and Saeed, K. (2003) 'What International Investors Look For when Investing in Developing Countries', *Energy and Mining Sector Board Discussion Paper* No. 6, May 2003, Washington D.C.: The World Bank.
2. Some results of the task manager survey were used mainly as sources of technical and other specific information, as the response rate was relatively low.
3. Projects that have been approved 5 years before evaluation and have at least 18 months of operating results. The evaluations for this study cover active projects approved up to 1996.
4. Turkson, J. (ed.) (2000) *Power Sector Reform in Sub-Saharan Africa*, London: Macmillan Press, p. 99.
5. World Bank (2002) 'Private Sector Development Strategy: Directions for the World Bank Group', *World Bank Strategy Paper*, April 9, Washington D.C.: The World Bank.
6. IFC's purpose, as specified in Article 1 of its Articles of Agreements, is "to further economic development by encouraging the growth of productive private enterprise in member countries." This has been further emphasized in IFC's current mission statement of promoting private sector investments in developing countries. By definition, all IFC operations in any sector aim to catalyze private investments through its direct and indirect financing and through project-induced impacts on creating an environment conducive to private sector investment.
7. Three projects have unsatisfactory ratings: the India-Private Power Development Technical Assistance Project, and the first and second Pakistan-Private Sector Energy Development Projects.
8. ESMAP (1999) *Global Energy Sector Reform in Developing Countries: A Scorecard*, Report No. 219-99, Washington D.C.: ESMAP/The World Bank. The Study assigned sector reform scores to 115 countries based on whether they have taken the seven steps necessary to liberalize the energy sector. Countries that have taken all seven steps received a score of 6 (the highest score) while those that have not taken single step received a score of 0. The seven steps are 1. Corporatization of state-owned utility; 2. Passing of energy law; 3. Regulatory body has started work; 4. Private sector investments in IPP under construction; 5. State-owned utility has been restructured; 6. Privatization of generation; and 7. Privatization of distribution.
9. In Ghana, the 1998 first Economic Reform Support Operation (ERSO I) improved the sector's financial viability, increased tariffs substantially, and enhanced the regulatory framework for private participation. The public utilities in Mali and Mauritania are being or were privatized and regulatory authorities put in place. Côte d'Ivoire also implemented major energy sector restructuring.
10. Notably in Côte d'Ivoire; in Kenya, where the sector unbundling and related tariff and regulatory reforms are delayed; and in Madagascar, Sierra Leone, and Tanzania, where the partial reforms achieved are of doubtful sustainability given the continuing serious weaknesses in financial management, which has been consistently rated unsatisfactory across Bank projects.
11. Achievements consisted mainly of training, studies, and official documents expressing intent to reform, as in Angola (where the Electricity Law was passed but the project was unsatisfactory because the regulatory infrastructure was not set up), Benin (where the tariff and Long Run Marginal Cost study was completed but the build-own-operate-transfer [BOOT] scheme failed), Malawi, and a few others.
12. Angola, Burundi, Democratic Republic of Congo, Guinea, Madagascar, Mali, Zambia.
13. Von Hirschhausen, C. and Optiz, P. (2001) 'Power Utility Re-Regulation in East European and CIS Transformation Countries (1990-99): An Institutional Interpretation', *DIW Discussion Paper* No. 246, Berlin: Deutsches Institut für Wirtschaftsforschung.
14. Albania, Armenia, Bosnia, Croatia, Georgia, and former Yugoslav Republic of Macedonia.
15. Countries undertaking negotiations with the European Union (EU) are Bulgaria, Cyprus, Estonia, Latvia, Lithuania, Malta, Poland and Romania.
16. Argentina should be in the advanced group of countries in terms of PSDE achievements, many of which were made in the 1980s.
17. Brazil has promoted a deep restructuring of its power sector. The Bank has assisted with the privatization of two electricity distribution companies in Rio Grande de Sul, representing approximately two-thirds of the state's territory. However, the federal regulatory agency has been slow to delegate powers to the newly created state regulatory authority. In Rio de Janeiro, Bank support was provided for the privatization of CERJ, the state utility. MIGA provided political risk

Endnotes (continued)

insurance for the privatization of Light Servicos de Electricidade, the electricity distributor in Rio de Janeiro, in fiscal year of 1997 and later supported the expansion and rehabilitation of this project.

18. Bolivia, El Salvador.

19. Bolivia, Colombia, El Salvador, Guatemala, Panama, Peru.

20. Bolivia, El Salvador, Guatemala, Peru.

21. Bolivia, Colombia, El Salvador, Guatemala, Peru.

22. Bolivia, Colombia, Peru.

23. The others include the Uch Power Project (525 MW), Rousch Power Limited (412 MW), Southern Electric Power Company (117 MW), and the Asia Pipeline Limited, which provided fuel to Hub, with a capacity of 3.5 million tons per annum.

24. Loan and equity risks are rated based on the following scale: 1-Very Good; 2-Good; 3-Average; 4-Watch; 5-Substandard; 6-Doubtful; and 7-Loss.

25. ESMAP (1999), *op. cit.*, endnote 8.

26. The economic rate of return (ERR) is the discount rate at which the present value of the project's costs to society is equal to the present value of its benefits to society.

27. While there is no single case of a less-than-satisfactory economic rate of return (ERR) where projects yield a satisfactory financial rate of return (FRR), there are 3 cases whereby the project returns to financiers were less than satisfactory but the ERRs were satisfactory.

28. Based on an IFC interview of major industrial users. This interview was undertaken as part of an XPSR field visit.

29. This includes a strong credit support arrangement and innovative equity structure.

30. IFC has a fifth investment in this country but this has not been included in the report since it is not yet mature for evaluation. This project has suffered significant delays, cost overrun, and technical difficulties at start-up.

31. Based on a synthesis of three indicators: (i) Screening, Appraisal, and Structuring; (ii) Supervision and Administration; and (iii) Role and Contribution.

32. Because many of the projects were affected by a series of unexpected regional and country financial crises, there is no basis for inferring that a detailed market analysis at the time of appraisal would likely have forecasted a demand growth lower than official, World Bank-endorsed projections and a retail tariff regime remaining at subsidized levels despite a robust sector reform program.

33. In the generation subsector, MIGA supported the construction, rehabilitation, or expansion of generating capacity totaling approximately 7,450 MW. Although the majority of projects (21) are in thermal generation, a significant share is in renewable energy such as hydro (7) and geothermal power (4), which account for a total capacity of 2,876 MW. Some of the thermal stations use clean-burning natural gas and others promote energy efficiency. The size of power stations ranges from 8 to 1,300 MW, with an average capacity of 233 MW.

34. MIGA has also managed five disputes between guarantee holders and host countries, which centered on the highly political issue of tariff rates. The incidence of such disputes in the electricity sector, most of which occurred in Asia, was higher than in any other sector for MIGA.

35. This includes projects in China up to FY99 and one dual-country project where only one country is IDA eligible.

36. Transmission and distribution projects were not part of the evaluation sample because they were underwritten more recently and were not mature enough for evaluation.

37. Krishnaswamy, V. and Stuggins, G. (2002) 'Private Sector Participation in the Power Sector in ECA Countries: Lessons Learnt from the Last Decade', *Technical Paper – Infrastructure and Energy Department Europe and Central Asia Region*, Washington, D.C.: The World Bank.

38. Rudnick, H. and Zolezzi, J. (2001) 'Electric sector deregulation and restructuring in Latin America: Lessons to be Learnt and Possible Ways Forward', *IEE Proceedings – Generation, Transmission and Distribution* Vol. 148, No. 2, March.

39. One of the initial conditions of the contract with CIE was that there would not be any forced staff departures despite some overstaffing.

40. See also: Albouy, Y (1999a) 'Impact of Power Sector Reforms', *Technical Paper*, April 1999, Washington D.C.: The World Bank.

Endnotes (continued)

41. In Bolivia, private investments had reached \$204 million by mid-1998, allowing demand growth of over 7 percent per year to be met.
42. In Panama, all privatized power companies contributed \$70.8 million to the treasury in 2000 by way of income taxes and dividends.
43. Statistics presented in Table 5 is based primarily on data from projects that the Bank has financed.
44. This is also true in the U.K. Others, like Australia, have experienced increasing prices. Spot prices tend generally to be very volatile, particularly in hydro-based systems, such as Chile, New Zealand, Nord Pool.
45. Newberry, D. and Pollitt, M. (1997) 'The Restructuring and Privatization of Britain's CEGB: Was it Worth It?' *Journal of Industrial Economics* No. 3: 269-304.
46. Waddams, C. and Hancock, R. (1998) 'Distributional Effects of Liberalizing UK Residential Utility Markets', *Fiscal Studies* Vol. 19, No. 3: 295-320.
47. Waddams, C. (2000) 'Better Energy Services, Better Energy Sectors—and Links with the Poor', in ESMAP (ed.) *Energy Services for the World's Poor*, Washington D.C.: ESMAP/The World Bank.
48. Dubash, N. (ed.) (2002) *Power Politics: Equity and Environment in Electricity Reform*, Washington, D.C.: World Resources Institute.
49. Chisari, O, Estache, A. and Waddams, C. (2001) 'Access by the Poor in Latin America's Utility Reform: Subsidies and Service Obligations', *WIDER Discussion Paper* No. 2001/75, Helsinki: United Nations University/World Institute for Development Economics Research.
50. Freund, C. and Wallich, C. (1995) 'Raising Household Energy Prices in Poland: Who Gains? Who Loses?' *World Bank Policy Research Working Paper* No. 1495, Washington, D.C.: The World Bank.
51. Newberry, D. (1995) 'The Distributional Impact of Price Changes in Hungary and the United Kingdom' *The Economic Journal* No. 105: 847-63.
52. Foster, V. and Araujo, C. (2001) 'Poverty and Modern Utility Services in Guatemala', background paper for the Guatemala Poverty Assessment, Washington D.C.: The World Bank.
53. Brook, P. (2000) 'Better Services for the Poor: Issues, Challenges and Opportunities for the Private Sector', paper presented at the Infrastructure for Development: Private Solutions and the Poor conference sponsored by the UK Department for International Development (DFID) and the Public-Private Infrastructure Advisory Facility, London, May 31 – 2 June.
54. Dollar, D. and Kraay, A. (2001) 'Growth is Good for the Poor.' Working Paper No. 2587. World Bank, April 12, 2001.
55. Additional relevant WBG policy and strategy pronouncements are: (2000) 'Fuel For Thought: Environmental Strategy for the Energy Sector'; (1997) 'Action Program for Facilitating Private Involvement in Infrastructure'; (1996) 'Good Practice Paper No. 4.45 on the Electric Power Sector'; (1996) 'Rural Energy and Development: Improving Energy Supplies for Two Billion People'; (1993) 'Energy Efficiency and Conservation in the Developing World – A World Bank Policy Paper'; (1993) 'The World Bank's Role in the Electric Power Sector: Policies for Effective Institutional, Regulatory and Financial Reform – A World Bank Policy Paper'.
56. Albouy, Y. (1999b) 'Performance Monitoring for the Energy Sector', *Technical Paper*, December 1999, Washington D.C.: The World Bank; see also Albouy, Y. (1999a) *op. cit.*, endnote 40.
57. For example, in FY99, 32 percent of energy lending was in the 21 riskiest countries, compared to 23 percent for other sectors; 65 percent were at risk in those 21 countries, compared to 13 percent elsewhere. In other sectors, the figures were 34 percent for the risky countries and not much lower elsewhere. This results from the tougher financial covenants in those countries, and the automatic translation of the East Asian, Russian and Ukrainian crises into bad ratings.
58. Rudnick, H. and Zolezzi, J. (2001), *op. cit.*, endnote 38.
59. This is reported on in project documents in Peru and El Salvador.
60. This is reported on in project documents for Peru.
61. OED/World Bank (2003) 'Indonesia Power Sector Thematic Overview and Project Performance Assessment Report—Suralaya Thermal Power Project (Loan 3501-IND); Sumatera and Kalimantan Power Project (LOAN 3761-IND)', Report No. 25960, May 21, Washington D.C.: Operations Evaluation Department, The World Bank.

Endnotes (continued)

62. In Côte d'Ivoire, ESMAP had recommended putting electricity and gas under a single regulator. In Ghana, the Public Utilities Regulatory Commission (PURC) regulates electricity and water tariffs but not hydrocarbons. A separate Energy Commission deals with licensing and regulates technical matters for electricity and hydrocarbons.

63. The Office of Utilities Regulation (OUR) in Jamaica is an exception. It is also unusual in covering a broad spectrum of regulated industries, including urban public transport.

64. The Ivorian regulator can only make tariff recommendations to government.

65. In Kyrgyzstan the law empowers the State Energy Agency to set tariffs, but in practice these are referred to the Cabinet. In Ghana, the Public Utilities Regulatory Commission (PURC) was set up by government to depoliticize tariff increases, but in practice the PURC refused to approve rises in the two years preceding presidential elections.

66. In Orissa (India) the Orissa Electricity Regulatory Commission (OERC) followed a populist rather than impartial policy on tariff hikes. In Maharashtra the regulators jurisdiction over the Dabhol IPP became a matter of litigation.

67. There are still a wide range of developed countries (including several U.S. states, Canadian provinces, and Western European nations, where such competitive power supply arrangements are not in place and where the more traditional utility monopolies exist, operating at high levels of efficiency.

68. As the EBRD puts it in its Energy Operations Policy document (EBRD (2001) 'European Bank for Reconstruction and Development – Energy Operations Policy', March 2001, London: EBRD, Annex 2, p. 4): "If cash collection is a problem, distribution should be privatized before generation."

69. WAPDA was not able to meet its payment obligations to the 20 IPPs (representing more than 4,000 MW of new capacity) and had to resort to renegotiation of PPAs to reduce the purchase price for power. Unaccounted-for electricity was estimated at as much as 35%, while revenue collections and average tariffs were low. In addition, IPP payments were denominated in U.S. dollars and the rupee depreciated by 45%.

70. MSEB was forced to back down production from its much lower cost generation plants in order to honor its take-or-pay contract with the Dabhol Power Co. (690MW, Phase I, the largest single foreign investment project in India) and defaulted on its payments to DPC. The Maharashtra state guarantee and Government of India sovereign guarantees were then invoked and the matter went to international arbitration as well as to the Indian Supreme Court regarding the jurisdiction of the state regulatory commission.

71. Total energy losses in the power sector are much higher because its main client, the Dhaka Electric Supply Authority, which serves the Dhaka metropolitan area, has system losses of over 28%.

72. Company Annual Reports and websites, presented in Bacon, R.W. & Besant-Jones, J. (2001) 'Global Electric Power Reform, Privatization and Liberalization of the Electric Power Industry in Developing Countries', *Annual Reviews: Energy and the Environment* No. 26: 331-359.

73. World Bank Group (2002) *op. cit.*, endnote 5.

Annex 1. Methodology and Instruments

Scope and Limitations

1. The study evaluates the performance of WBG activities in PSDE against policy commitments it has made: (i) since the 1993 Policy Paper (“The World Bank’s Role in the Electric Power Sector: Policies for Effective Institutional, Regulatory and Financial Reform”); (ii) the Policy Paper’s 1996 Best Practice statement; and (iii) the May 2001 Energy Business Renewal Strategy (EBRS). The study does not review the broader, underlying rationale for promoting PSD. The original scope of the study, as envisioned in the Approach Paper, also included coal, oil, and gas, which will now be covered by a separate Extractive Industries Review conceived after the decision to undertake this study.

2. The current study focuses on the activities of IBRD/IDA (or “the Bank”), IFC, and MIGA in the electric power sector (including renewables). Since very few countries have gone through the full set of reforms, this study evaluates mainly the PSDE promotion process. It assesses outcomes and impacts within the limits of the available literature, including existing evaluations and five country studies (Côte d’Ivoire, Pakistan, Philippines, Poland, Turkey). This is a joint study of the Operation Evaluation Department (OED) of the Bank, the Operations Evaluation Group (OEG) of the IFC, and the Operations Evaluation Unit (OEU) of MIGA. Project performance and outcome ratings in this study are based on the respective evaluation criteria of the Bank, IFC, and MIGA. The study period focuses on fiscal 1990–99, although the study also provides observations on the PSDE activities of the WBG in fiscal 2000/01.

3. For the Bank, input and available output indicators were collected during Phase 1 for the entire Bank PSDE portfolio, which includes PSDE-related projects in the electric power, economic policy, public sector management, private sector development, and finance sectors. Further data on project outputs and information on outcomes were collected during Phase 2 through a review of Project Status Reports (for active projects), and Implementation Completion Reports, Evaluation Summaries, and Project Performance Assessment Reports (for closed projects), as well as a Task Manager (TM) Survey. The purpose of the TM survey was to obtain data on sector-level outcomes, because of lack of data from the aforementioned project documentation, which generally focus on project-specific results. This may have its limitations, as some bias may have been introduced by having TMs assess the contribution to overall sector reforms made by projects for which they were responsible. A blank copy of the TM Survey form is attached. Some results of the survey were useful for providing technical and other specific information, as the response rate was relatively low. The PSDE-related AAA was studied in depth for the country case studies, based on generally accepted AAA criteria. Comments were also received from a group of external reviewers and taken into account in the final drafting of the study.¹

4. For IFC, this study covers, to the extent data permits, power sector operations approved from fiscal 1990 to fiscal 1999, comprising 57 investment operations. This study does not include non-power projects with power components except for power sector-focused financial markets projects.

Methodology

Phase 1

5. The overall methodology for this study is summarized in the design matrix in the table below. Phase 1 is based on a desk review. The literature review assessed recent evaluations as well as global

¹ The external reviewers included Dr. Catherine Waddams, Dr. V.V. Desai, Dr. Navroz Dubash and Dr. Graham Thomas.

PSDE issues and trends based mainly on internal reports and summaries of global experience. The portfolio review analyzed the energy, public sector reform, adjustment, and other sectoral lending data, which led to the identification of 154 Bank projects that support PSDE exclusively (16) or have PSDE components (138).

6. To achieve depth and representativeness of the overall PSDE portfolio, the *OED* review concentrated on 15 countries that together account for 55 percent of the projects in the Bank's portfolio (Argentina, Bolivia, China, Côte d'Ivoire, Ghana, India, Indonesia, Pakistan, Panama, Philippines, Poland, Russia, Thailand, Turkey, and Ukraine). A Project Evaluation Brief (PEB) was prepared for each of the PSDE-related projects in these countries. The PEBs include PSDE-specific project data, such as PSDE reform areas addressed, agreed actions, and instruments proposed to achieve the PSDE objectives; project ratings were taken from OED's Evaluation Summary for closed projects, and from the latest Project Status Report (PSR) for active projects. The PEBs were updated during Phase 2 to include results from the Task Manager survey, described in Phase 2 below.

7. The *IFC* portfolio review covered 100 percent of the approved and committed investments and advisory operations in the 1990s. *OEG* reviewed the objectives, design, and structure of 57 power projects. It examined the portfolio performance of the investment operations approved and committed in the 1990s relative to the entire IFC portfolio. It looked into existing self-evaluations of power projects. It drew from the Power Sector Strategy and Business Plan Papers, Project Supervision Reports, Board Reports, Background Papers for the EBRS, Annual Review of Portfolio Performance, and corporate portfolio data maintained by IFC's Portfolio Management Unit.

8. *OEU's* review of MIGA political risk guarantees also covered 100 percent of the portfolio. *OEU* reviewed data on 72 guarantees for 39 electric power projects in 25 countries.

Phase 2

9. Phase 2 consisted of a meta-synthesis of evaluation findings, based on desk studies and selected field visits to study countries, and evaluation findings at the project level. It focused on evaluating the results and lessons learned from the WBG's PSDE interventions, including their performance vis-à-vis EBRS objectives, namely, promoting PSD, macro-fiscal balancing, helping the poor directly, and protecting the environment, for which the specific indicators are as follows:

- ***Promote good governance and PSD***, by creating transparent, non-discriminatory regulatory mechanisms; introducing and expanding competition and cross-border trade; divesting assets to socially responsible and corruption-free strategic investors; catalyzing private investments; and strengthening the voice of consumers and communities.
- ***Improve macrofiscal balances***, by replacing public with private investments; rationalizing taxes, managing risks associated with contingent public liabilities; financing public restructuring costs; eliminating operating subsidies to public enterprises; and boosting budget revenues through commercialization and privatization.
- ***Help the poor directly***, by facilitating access to modern, cleaner fuels and electricity; reducing costs, and improving quality to low-income households; ensuring that subsidies target and reach the poor; and promoting energy-efficient and less-polluting end-use technologies.
- ***Protect the environment***, by strengthening environmental management capacity; removing market barriers to renewables and energy efficiency; and facilitating carbon trading and joint investments to reduce greenhouse gases.

Summary of Portfolio Review Methodology

<i>Key Evaluation Question</i>	<i>Data Needed to Answer the Question</i>	<i>Documentation and Sources of Evidence</i>	<i>Instruments to Record Data and Evaluation Findings (involving both statistical and content analysis)</i>	
1. How have private participation and the WBG's role in energy sector changed during the 1990s?	<ul style="list-style-type: none"> • IFC investment and advisory operations • Bank, IFC, and MIGA strategies • Bank Projects (freestanding PSDE projects, and projects with PSDE components in energy and non-energy sectors) • PSDE objectives and actions in Bank lending portfolio • Bank ESW/AAA for PSDE 	<ul style="list-style-type: none"> • WBG Policy Statements • Bank's Regional Sector Strategy Papers • SARs • PADs • Legal Documents (loan and project agreements) • IFC strategy papers and business plans 	<ul style="list-style-type: none"> • Bank Project Evaluation Briefs • CAS-PSDE Program Matrices • Synthesis of existing self-evaluations • Literature Review 	P H A S E 1
2. To what extent has the WBG's energy assistance supported its strategic direction to promote PSDE?	<ul style="list-style-type: none"> • Bank ratings at closing of 16 freestanding projects, performance data from PSRs, ICRs, and PPARs for 138 projects with PSDE components • Desk review of PSDE content of CASs • Objective, design, and structure of IFC projects and advisory operations 	<ul style="list-style-type: none"> • OED ratings database • QAG quality at entry assessments • PSRs • ICRs • Evaluation Summaries • PPARs • Existing self-evaluation reports • IFC project documents • IFC project teams 	<ul style="list-style-type: none"> • CAS-PSDE Program Matrices • Short summary evaluations of Bank PSDE programs for the 15 core countries • IFC and MIGA portfolio review • Literature Review 	
3. What have been the results of the WBG's interventions?	<ul style="list-style-type: none"> • Financial flows • Economic results • Social and poverty reduction effects • Environmental indicators • Portfolio performance indicators • Development and investment outcome of mature IFC projects 	<ul style="list-style-type: none"> • Survey of Bank task managers (focusing on PSDE components) • Bank supervision back-to-office reports, mid-term reviews, and action letters • Field missions • IFC project appraisal and supervision documents • IFC project teams • Bank and IFC portfolio reviews 	<ul style="list-style-type: none"> • Project Evaluation Briefs update • Country Case Studies • Mini-evaluation of IFC and MIGA projects • Literature Review update 	P H A S E S 1 & 2
4. What are the lessons for accelerating progress in achieving the WBG's PSDE objectives?	<ul style="list-style-type: none"> • EBRs performance indicators • Factors of internal and external effectiveness • Success drivers and obstacles 	<ul style="list-style-type: none"> • Survey • Bank staff and client interviews • Advisory Panel • Field workshops • IFC project teams • Existing self-evaluation 	<ul style="list-style-type: none"> • Summary evaluations of Bank PSDE programs • Synthesis of IFC and MIGA evaluation findings 	

10. *OED* conducted a task manager survey to obtain data on the outcomes of PSDE components (see paragraph 3 on its limitations). Most of the Bank's PSDE interventions are components of larger projects, and information on components has not been reported adequately. The survey was followed up using in-depth interviews with selected Bank sector managers and staff. In preparation for Phase 2, a CAS-PSDE Program Matrix was prepared for each of the 15 focus countries. These matrices trace the 1990s evolution of the PSDE focus (if any) in the Country Assistance Strategy, the level of policy support, and the AAA and lending program. The CAS framework is relevant because an evaluation based on individual projects would not capture the evolution of power sector reforms since the early-1990s. Moreover, many of the Bank Group-level coordination and strategic issues raised in the evaluation can only be addressed at the CAS level. Each matrix has a draft country-level PSDE performance evaluation summary to assess, on a preliminary basis, the overall relevance, outcome, and effectiveness of the PSDE program in each country, thus providing the evaluators a set of working hypotheses for Phase 2. Many of these hypotheses were guided by the literature review. Both the

matrices and the evaluation summaries provide an interim aggregation of Phase 1 data, which will be corroborated or revised from the Phase 2 findings.

11. In deriving evaluative findings, the main unit of account is the country-level PSDE program of lending and ESW/AAA (economic and sector work/analytical advisory assistance) during the 1990s and up to the present. The Bank's project-level results are also presented in different aggregations but are mostly used as building blocks to assess country progress against PSDE objectives.

12. OEG presented existing evaluation findings for all mature IFC projects (15) and evaluated all mature and active projects (14) that have not undergone self-evaluation. OEG conducted a mini-evaluation of each of these projects using an abbreviated version of the Expanded Project Supervision Report (XPSR) evaluation framework. These mini-evaluations were drawn from interviews with IFC investment teams and from field visits to projects in case study countries. Each investment operation is rated based on three distinct outcomes:

- *Development Outcome*—the project's impact on a country's development
- *Investment Outcome*—the operation's gross contribution to IFC's income
- *Effectiveness*—IFC's contribution to the operation's outcome.

13. OEG synthesized the findings from all existing and pending evaluations with a view to deriving global IFC sector-level conclusions. The IFC evaluation draws from OEG's *Annual Review Findings* to the extent appropriate. It is, however, not an electric power sector slice of the Annual Review, but instead builds on the findings of the Annual Review as relevant to the electric power sector.

14. In addition to reviewing *ex ante* data from all guarantees in the electric power sector, OEU provided synthesized findings of the impacts of evaluated operations in that sector.

**OED/ OEG Study
on
Private Sector Development
in the Electric Power Sector (PSDE)
Sector Managers and Task Team Leaders Survey**

We would be especially grateful if you would fill in the "Comments" boxes. Thank you very much for your time and effort!

Please enter your name:

Please enter the country for which you are evaluating the PSDE program:

Q1. To what extent is PSDE a priority in the current CAS?

Q2. What ESW/AAA did the Bank support to promote PSDE?

Q2a. What role did the ESW/AAA play in achieving the PSDE objectives of your lending program?

Q3. How did your PSDE program of lending and ESW/AAA support the four priority areas of the May 2001 Energy Business Renewal Strategy

- a) Promote good governance and PSD
- b) Help the poor directly
- c) Improve macro/fiscal balances
- d) Protect the environment

Q4. Please provide ratings for the overall outcome, institutional development impact, sustainability, Bank performance and Borrower performance of your PSDE program:

Outcome

Ratings:

- Highly Satisfactory
- Satisfactory
- Moderately Satisfactory
- Moderately Unsatisfactory
- Unsatisfactory
- Comments:

Institutional Development Impact

Ratings:

- High
- Substantial
- Modest
- Negligible
- Comments:

Sustainability

Ratings:

- Highly Likely
- Likely
- Unlikely
- Highly Unlikely
- Not Evaluable

Comments:

Bank performance

Ratings:

- Highly Satisfactory
- Satisfactory
- Unsatisfactory
- Highly Unsatisfactory

Comments:

Borrower performance

Ratings:

- Highly Satisfactory
- Satisfactory
- Unsatisfactory
- Highly Unsatisfactory

Comments:

Q5. How well did the Bank coordinate with IFC and MIGA in implementing the PSDE program?

Q6. How well did the Bank coordinate with its partners (including the private sector, regional banks, and bilateral donors)?

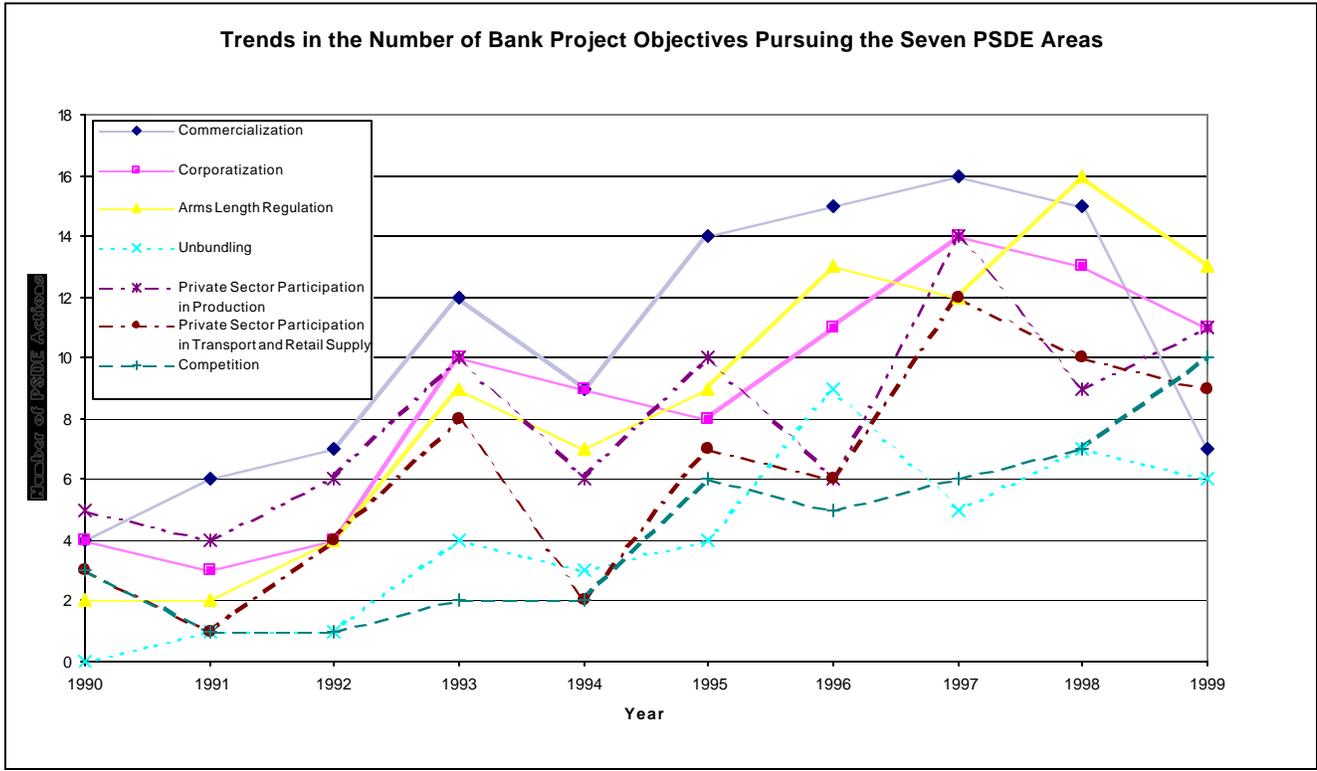
Q7. What lessons learned from your PSDE program should be reflected in the OED/ OEG study on the World Bank Group's performance in promoting PSDE? (For example, this could include lessons on what the Bank did right and what it could have done differently)

THANK YOU FOR ANSWERING THIS SURVEY!

Annex 2. World Bank Group PSDE Portfolio-At-A-Glance

	Bank	IFC	MIGA	Total
Total number of projects	154	64	43	261
Freestanding vs. components				
PSDE components	138			138
Freestanding PSDE projects	16	64	39	123
By status				
Active	58			
Closed	96			
By region				
EAP	35	6	9	50
ECA	39	7	2	48
AFR	30	3	2	35
LAC	25	22	20	70
SAR	20	16	6	43
MNA	5	2	0	7
By sector group				
Electric Power and Other Energy	108	64	39	215
Economic Policy	23			23
Private Sector Development	9			9
Public Sector Management	8			8
Oil and Gas	3			3
Finance	2			2
Environment	1			1
By instrument type				
Specific Investment Loans (SILs)	81			81
Structural Adjustment Loans (SALs)	27			27
Sector Investment and Maintenance Loans (SIMs)	11			11
Technical Assistance Loans (TALs)	15			15
Sectoral Adjustment Loans (SECALs)	8			8
SIL/ Partial Credit Guarantee	5			5
Partial Credit Guarantee	1			1
Partial Risk Guarantee	3			3
SIL/ Partial Risk Guarantee	1			1
Adaptable Program Loan (APL)	1			1
Rehabilitation Loan (RIL)	1			1
By ratings (closed projects)				
Highly Satisfactory	5			5
Satisfactory	44			44
Marginally Satisfactory	17			17
Marginally Unsatisfactory	4			4
Unsatisfactory	25			25
Highly Unsatisfactory	1			1
By ratings (active projects)				
Highly Satisfactory	3			5
Satisfactory	38			45
Unsatisfactory	12			14
Highly Unsatisfactory	0			0
Not Rated	5			5

Annex 3. Trends in PSDE Objectives in the Bank's Portfolio



138 Projects with PSDE Components

PROJECT NAME	Region	Country	FY of Approval	Year of Closing	Ratings: Active projects Latest PSR date	Development Objective	Implementation Progress	Environmental Plan	Financial Mgt	M & E	Ratings: Closed projects ES/ICR/ or PAR	Outcome	Sustainability	Institutional Development	Bank Performance	Borrower Performance
Power Sector Rehabilitation	AFR	Angola	1992	2000							ES	U	NE	N	U	U
Power Rehabilitation And Extension	AFR	Benin	1991	2000							ES	U	NE	N	U	U
Energy Sector Rehabilitation	AFR	Burundi	1991	1999							ES	U	U	N	U	U
Energy And Water Sector Reform	AFR	Cape Verde	1999		2/25/2002	S	S	NA	NA	S						
SNEL TA	AFR	Congo, Democ	1992	1995							ICR	U	U	M	U	U
Private Sector Energy	AFR	Cote Divoire	1995		2/21/2002	HS	S	S	U	S						
Energy Sector Adjustment Loan	AFR	Cote D'ivoire	1990	1991							PAR	MS	NE	M	MS	MS
Azito Power	AFR	Cote D'ivoire	1999		6/29/2001- Project dropped											
Energy II	AFR	Ethiopia	1996		12/28/2001	S	S	HS	S	S						
Fifth Power Project	AFR	Ghana	1990	1997							PAR	MU	U	M	U	U
Nat'l Electrification	AFR	Ghana	1993	2000							ES	S	U	M	U	S
Thermal Power	AFR	Ghana	1995	2001	12/28/2001	S	S	S	U	S						
Economic Reform Support Operation	AFR	Ghana	1998	1999							ES	S	L	N	S	S
Second Economic Reform Support Operation	AFR	Ghana	1999	2001	12/27/2001	S	S	NA	NA	NA						
Power II	AFR	Guinea	1993	1999							PAR	U	U	N	U	U
Energy Sector Reform And Power Development	AFR	Kenya	1997		12/28/2001	S	S	S	U	S						
Energy Sector Development	AFR	Madagascar	1996		12/27/2001	S	S	NA	HU	S						
Power V	AFR	Malawi	1992	2001							ICR	U	U	M	S	U
Power II	AFR	Mali	1989	1998							ES	MS	U	M	S	U
Regional Hydropower Development	AFR	Mali	1997		12/21/2001	U	U	U	S	U						
Regional Hydropower Development	AFR	Mauritania	1997		12/21/2001	U	U	U	S	U						
Power System Maintenance And Rehabilitation	AFR	Nigeria	1990	1996							ES	U	U	M	U	U
Energy Sector Rehabilitation	AFR	Rwanda	1993		12/28/2001	S	S	S	S	S						
Regional Hydropower Development	AFR	Senegal	1997		12/21/2001	U	U	U	S	U						
Power Sector Rehabilitation	AFR	Sierra Leone	1992		12/28/2001	S	S	NA	S	S						
Power VI	AFR	Tanzania	1993		6/26/2001	S	S	S	U	S						
Togo/Benin Engineering And TA	AFR	Togo/Benin	1992	1999							ICR	U	L	M	S	S
Power Rehabilitation	AFR	Zambia	1998		12/3/2001	S	S	S	U	S						
Power III	AFR	Zimbabwe	1994	1999							ICR	S	L	S	S	HS
Phnom Pehn Power Reh	EAP	Cambodia	1996	2000							ICR	S	L	SU	HS	S
Tianhuangping Hydro	EAP	China	1993	2002	12/27/2001	S	HS	NR	S	HS						
Yangzhou Thermal Pow	EAP	China	1994	2002	12/21/2001	S	S	S	S	S						
Zhejiang Power Devt	EAP	China	1995	2003	12/27/2001	HS	HS	S	HS	HS						
Sichuan Transmission	EAP	China	1995	2002	12/27/2001	S	S	S	U	S						
Ertan Hydro II	EAP	China	1996	2001							ICR	S	L	SU	S	S
Waigaoqiao Thermal Power	EAP	China	1997	2007	12/25/2001	S	S	S	S	NR						
Inner Mongolia (Tuoketuo) Thermal Power	EAP	China	1997	2005	12/17/2001	S	S	S	NR	NR						
Hunan Power Develop.	EAP	China	1998	2005	12/21/2001	S	S	S	S	NA						
Technical Assitance For Public And Private Provision Of Infrastructure	EAP	Indonesia	1991	1997							PAR	S	L	S	S	S
Sumatera & Kaliman P	EAP	Indonesia	1994	2001							ICR	U	U	M	S	S
Rural Elect II	EAP	Indonesia	1995	2000							ES	S	U	M	S	S
Pow. Trans & Dist II	EAP	Indonesia	1996	2002	12/27/2001	S	S	NR	HU	S						
Solar Homes Systems	EAP	Indonesia	1997	2001							ES	U	NE	S	HS	S
Renw. Ener Smal Pw P	EAP	Indonesia	1997	2001	7/23/1998	U	U	NR	S	S						
Provincial Grid Integration	EAP	Lao, P.D.R.	1993	2000							ES	S	NE	S	S	S
Southern Provinces Rural Electrification	EAP	Lao, P.D.R.	1998		10/17/2001	U	S	S	U	S						
Leyte Cebu Geothermal	EAP	Philippines	1990	1996							ES	U	NE	M	U	Blank
Energy Sector Project	EAP	Philippines	1990	1996							PAR	MU	NE		U	U
Rural Elect	EAP	Philippines	1992	1998							PAR	U	NE	M	U	U
Power Sector Transmission And Rehabilitation	EAP	Philippines	1993	1997							ES	U	NE	M	U	U
Leyte-Luzon Geother.	EAP	Philippines	1994	2000							ES	U	U	M	U	U
Distribution System And Energy Efficiency	EAP	Thailand	1993	2000							ES	S	L	M	S	S
Second Power System Development	EAP	Thailand	1993	1995							ES	S	L	S	S	HS
Lam Takhong Pump Storage	EAP	Thailand	1995	2001							ICR	S	L	H	S	HS
Metropolitan Distribution Reinforcement	EAP	Thailand	1995	1999							ES	S	L	M	S	S

PROJECT NAME	Region	Country	FY of Approval	Year of Closing	Ratings: Active projects Latest PSR date	Development Objective	Implementation Progress	Environmental Plan	Financial Mgt	M & E	Ratings: Closed projects ES /ICR/ or PAR	Outcome	Sustainability	Institutional Development	Bank Performance	Borrower Performance
Distribution System Reinforcement	EAP	Thailand	1997	1999							ES	S	L	M	S	S
Distribution Automation And Reliability Improvement	EAP	Thailand	1997		12/27/2001	S	S	NA	S	S						
Economic Management Assistance	EAP	Thailand	1998		12/13/2002	S	S	NA	S	S						
Egat Investment Program Support	EAP	Thailand	1999		No PSRs in SAP											
Economic And Financial Adjustment Loan	EAP	Thailand	1999	2000							ES	S	L	S	S	S
Second Economic And Financial Adjustment	EAP	Thailand	1999	2000							ES	MS	L	M	S	S
Power Sector Rehabilitation & Expansion	EAP	Vietnam	1995	2000							ES	S	L	S	S	S
Power Development	EAP	Vietnam	1996	2000							ES	S	L	S	HS	S
Transmission, Distribution And Disaster Reconstruction	EAP	Vietnam	1998		12/27/2001	U	S	S	U	S						
Power Transmission & Distribution	ECA	Albania	1996		10/29/2001	U	S	S	U	Blank						
Power Maintenance	ECA	Armenia	1995	1999							ES	S	HL	M	S	S
SAC I	ECA	Armenia	1996	1998							ES	S	L	M	S	S
Rural Elect	EAP	Philippines	1992	1998							PAR	U	NE	M	U	U
Power Sector Transmission And Rehabilitation	EAP	Philippines	1993	1997							ES	U	NE	M	U	U
Leyte-Luzon Geother.	EAP	Philippines	1994	2000							ES	U	U	M	U	U
Distribution System And Energy Efficiency	EAP	Thailand	1993	2000							ES	S	L	M	S	S
Second Power System Development	EAP	Thailand	1993	1995							ES	S	L	S	S	HS
Lam Takhong Pump Storage	EAP	Thailand	1995	2001							ICR	S	L	H	S	HS
Metropolitan Distribution Reinforcement	EAP	Thailand	1995	1999							ES	S	L	M	S	S
Distribution System Reinforcement	EAP	Thailand	1997	1999							ES	S	L	M	S	S
Distribution Automation And Reliability Improvement	EAP	Thailand	1997		12/27/2001	S	S	NA	S	S						
Economic Management Assistance	EAP	Thailand	1998		12/13/2002	S	S	NA	S	S						
Egat Investment Program Support	EAP	Thailand	1999		No PSRs in SAP											
Economic And Financial Adjustment Loan	EAP	Thailand	1999	2000							ES	S	L	S	S	S
Second Economic And Financial Adjustment	EAP	Thailand	1999	2000							ES	MS	L	M	S	S
Power Sector Rehabilitation & Expansion	EAP	Vietnam	1995	2000							ES	S	L	S	S	S
Power Development	EAP	Vietnam	1996	2000							ES	S	L	S	HS	S
Transmission, Distribution And Disaster Reconstruction	EAP	Vietnam	1998		12/27/2001	U	S	S	U	S						
Power Transmission & Distribution	ECA	Albania	1996		10/29/2001	U	S	S	U	Blank						
Power Maintenance	ECA	Armenia	1995	1999							ES	S	HL	M	S	S
SAC I	ECA	Armenia	1996	1998							ES	S	L	M	S	S
SAC II	ECA	Armenia	1997	1999							ES	MS	Uncertain	M	S	S
SAC III	ECA	Armenia	1998	2001							ES	MS	L	M	S	S
Enterprise And Banking Privatization Adjustment Loan	ECA	Bosnia-Herzegovina	1999		12/18/2001	S	S	NA	NA	S						
Energy	ECA	Bulgaria	1993	2000							ES	S	L	H	S	S
District Heating Rehabilitation	ECA	Estonia	1994	2000							ES	S	L	H	S	S
Structural Adj TA Credit I	ECA	Georgia	1995	1999							ES	S	L	S	S	S
Structural Adj Credit I	ECA	Georgia	1996	1998							ES	S	L	M	S	S
Power Rehabilitation	ECA	Georgia	1997	2001							ES	MS	NE	S	S	U
Structural Adj TA Credit II	ECA	Georgia	1998	2000							ES	S	L	S	S	S
Structural Adj Credit II	ECA	Georgia	1998	1999							ES	MS	L	M	S	S
Energy Sector Adjustment Credit	ECA	Georgia	1999	2002							ICR	S	L	M	HS	S
Structural Adj Credit III	ECA	Georgia	2000		11/21/2001	S	S	NA	NA	NA						
Enterprise Reform Loan	ECA	Hungary	1992	1994							ES	S	L	S		
Energy And Environment	ECA	Hungary	1994	2001												
Enterprise And Financial Sctr Adj	ECA	Hungary	1997	1999							ES	HS	L	S	HS	HS
Public Sector Resource Mgmt Adj Loan	ECA	Kazakhstan	1998	2000							ICR	S	L	S	S	S
Power And District Heating Rehabilitation	ECA	Kyrgyz Repub	1996		12/21/2001	S	S	S	S	Blank						
Power Rehabilitation	ECA	Lithuania	1994		1/16/2002	HS	S	S	S	NR						
Structural Adjustment Loan	ECA	Lithuania	1997	1999							ES	S	L	S	HS	S

PROJECT NAME	Region	Country	FY of Approval	Year of Closing	Rating: Active projects Latest PSR date	Development Objective	Implementation Progress	Environmental Plan	Financial Mgt	M & E	Rating: Closed projects ES /ICR/ or PAR	Outcome	Sustainability	Institutional Development	Bank Performance	Borrower Performance
Power System Improvement	ECA	Macedonia	1998		12/21/2001	S	S	S	S	S	ICR	S	L	M	S	S
Energy	ECA	Moldova	1996	2001												
Second Structural Adjustment Credit/Loan (SAL II)	ECA	Moldova	1998	2001							ES	MS	NE	M	S	U
Energy Resource Development	ECA	Poland	1990	1998							ES	MU	L	M	S	S
Heat Supply Restruct	ECA	Poland	1991	2000							ES	HS	HL	H	S	HS
Structural Adjustment Loan	ECA	Poland	1991	1992							PAR	S	L	M	NR	NR
Power Transmission	ECA	Poland	1996	2002	12/18/2001	S	S	Blank	S	Blank						
Power Sector Rehabilitation And Modernization	ECA	Romania	1996		12/21/2001	U	S	S	U	S						
Electr. Sector Reform Support	ECA	Russia	1997	2002	12/26/2001	S	S	NA	NR	S						
SAL I	ECA	Russia	1997	1998							ES	U	L	M	U	U
SAL II	ECA	Russia	1998	1999							ES	U	L	M	U	U
SAL III	ECA	Russia	1999	2001							ES	U	L	M	S	U
TEK Restruct.	ECA	Turkey	1991	2000							ES	MS	L	S	S	U
Privatization Implementation And Social Safety Net	ECA	Turkey	1994	1999							ES	U	U	Blank	S	U
Nat'l. Trnsm. Grid	ECA	Turkey	1998	2004	12/20/2001	S	S	S	U	Blank						
Rehabilitation Loan	ECA	Ukraine	1995	1996							PAR	MS	NE	M	S	NR
Electricity Market Development	ECA	Ukraine	1997	2000							ES	U	U	N	U	U
Yacyreta II	LAC	Argentina	1993	2000							ICR	U	U	M	U	U
Provincial Reform Loan	LAC	Argentina	1995	1998							ES	HS	L	H	HS	HS
Renewable Energy In The Rural Market	LAC	Argentina	1999		2/1/2001	S	S	NR	S	S						
Special Structural Adjustment Loan	LAC	Argentina	1999		7/14/2000	S	S	NR	NR	S						
Second Power Development	LAC	Belize	1995	1999							ES	S	L	S	S	S
Structural Adjustment Program	LAC	Bolivia	1992	1996							PAR	MS	L	S	U	S
Reg. Reform And Cap. TA	LAC	Bolivia	1995	1999							ES	S	L	S	S	S
Capitalization Program Adj. Cre	LAC	Bolivia	1995	1999							ES	HS	L	S	HS	HS
Regulatory Reform And Priv. TA	LAC	Bolivia	1998	2003	11/27/2001	S	S	NR	S	S						
Reg. Reform Sector Adj. Credit	LAC	Bolivia	1999	2001	10/15/2001	U	U	NR	NR	NR						
Rio Grande Do Sul State Reform	LAC	Brazil	1997	1998							ES	MS	U	M	S	U
Rio De Janeiro State Reform Priv	LAC	Brazil	1998	1999							ES	S	L	S	HS	S
Energy Sector Modernization	LAC	El Salvador	1996		12/21/2001	S	S	S	S	S						
Priv Participation In Infrastructure TA	LAC	Guatemala	1997	2002	11/19/2001	S	S	NR	S	S						
Energy Sector Deregulation And Privatization	LAC	Jamaica	1993	2000							ES	U	U	M	S	U
Infrastructure Privatization TA	LAC	Mexico	1996	2000							ES	S	L	S	S	S
Utilities Restructuring TA	LAC	Panama	1998	2002	10/11/2001	S	S	S	S	S						
Privatization TA	LAC	Peru	1993	1998							ES	S	L	S	S	HS
Power Transmission And Distribution	LAC	Uruguay	1996		11/30/2001	S	S	NA	U	S						
Power Sector Efficiency Improvement	MNA	Iran	1993	2001							ES	S	L	S	HS	S
Power Sector Restructuring And Transmission Expansion	MNA	Lebanon	1997	2002							ICR	HU	HU	N	U	HU
Sana'a Emergency Power	MNA	Yemen	1999		1/25/2002	U	S	S	U	S						
Energy Sector Adjustment Credit	South Asia	Bangladesh	1989	1990							PAR	S	U	N	S	U
Private Sector Infrastructure Development	South Asia	Bangladesh	1998		3/4/2002	S	S	S	S	S						
Maharashtra Power II	South Asia	India	1992	1998							ES	U	NE	M	S	U
Renewable Resources Dev/ Alternate Energy	South Asia	India	1993	1995							ES	HS	L	M	HS	HS
Orissa Power Sector	South Asia	India	1996	2003	12/28/2001	U	U	S	U	S						
Haryana Power APL-I	South Asia	India	1998	2001							ES	MU	NE	S	S	U
AP Power Restructuring Project	South Asia	India	1999	2004	2/14/2002	S	S	S	U	S						
Public Sector Adjustment Loan/ Credit	South Asia	Pakistan	1994	1996							ES	MS	U	N	S	S
Power Sect. Dev. Pro.	South Asia	Pakistan	1994	2001							ICR	S	L	M	S	S
Ghazi Barotha Hydrop	South Asia	Pakistan	1996	2002	11/29/2001	S	U	S	U	S						
Structural Adjustment Loan	South Asia	Pakistan	1999	1999							ES	MS	L	N	S	S
Private Sector Infrastructure Development	South Asia	Sri Lanka	1996		1/15/2002	U	U	S	S	S						
Energy Services Delivery	South Asia	Sri Lanka	1997		10/4/2001	S	S	NR	S	S						

Annex 5. Analysis of the Performance of Freestanding PSDE Projects and Projects with PSDE Components

Evidence suggests that satisfactory outcomes in both freestanding and PSDE component projects are primarily due to country factors and to timely and relevant Bank assistance. *In Jordan*, the Energy Adjustment Loan (ESAL), a freestanding project and the only PSDE project in the country, was rated as satisfactory by OED and the Region because it achieved the following: (i) corporatization and commercialization of sector institutions; (ii) restructuring the institutional framework of the sector; and (iii) rationalized energy prices and strengthened financially power sector institutions, although the follow-through on energy price adjustments has been patchy and the sector's institutional strengthening is incomplete, according to OED's PPAR (2001). Close collaboration between the government and the Bank at various stages of project preparation and implementation, open and constructive dialogue between the Bank and the government, and timely use of ESW/AAA by the Bank to advise the government in policy-related issues were critical to the satisfactory outcome of the project.

In Pakistan, the freestanding Private Sector Energy Development Project (PSDEP I) and its follow-on project, PSDEP II, were both rated unsatisfactory by OED and the Region because although the projects achieved their physical targets and established incentives to encourage private sector participation, the related economic, financial, institutional, and technical aspects were achieved only partially and unsustainably. The lack of commitment and poor performance of the government were demonstrated in three ways. First, government agencies created to implement PSDE were subject to considerable political interference and high staff turnover. Second, excessive obligations to IPPs in the face of reduced demand and unreformed tariff structure resulted in oversupply in generation that eventually undermined the financial viability of WAPDA and the macroeconomic stability of the country. Third, highly politicized dealing with IPPs contributed to the overall decline in foreign investor confidence in the country. The Bank's focus on specific transactions relating to IPPs rather to the reform itself contributed to the unsatisfactory outcome of the projects.

Thailand's Lam Takhong Pumped Storage project with a PSDE component was rated highly satisfactory by OED because the project fully achieved its objectives. The Bank assisted the Electricity Generating Authority of Thailand (EGAT) in optimizing its investment program. EGAT adopted sound policies and strategies for environmental and social management, and defined a framework and guidelines for environmental assessment of power development plans. EGAT implemented the recommendations of a study on economic regulation, tariffs, and development of bulk supply. The Bank acted as facilitator, and played an informal role in advising the Government on the reform of the power sector. The government's proactive role in the reform process was instrumental to the overall success of the project. Through its National Energy Policy, the government conducted several important studies associated with restructuring of the Power Sector Industry, drafted the Energy Act, finalized the regulatory regime for the energy sector, formulated the power pool model, and secured Cabinet approval for its proposals.

In contrast, *Lebanon's* Power Restructuring and Transmission Project, also a project with a PSDE component, was rated highly unsatisfactory by OED because the institutional reforms had not been implemented and the physical components of the project (transmission system and overhead transmission lines) were not completed, and contracts for the two substations had not been awarded. Electricité du Liban (EdL) remains financially and institutionally weak, and progress at involving the private sector has been negligible. The government's inaction on agreed covenants and actions on institutional reforms contributed to the overall unsatisfactory performance of the project.

Annex 6. IFC Advisory Operations in Power: Standalone Advisory Operations

I. Operations Undertaken by the Private Sector Advisory Services Privatization Policy and Transaction (PSAPT, formerly IFC's Corporate Financial Services or CFS)

<i>Fiscal Year</i>	<i>Country</i>	<i>Project Name</i>	<i>Description</i>
FY94	Peru	Electrolima	Privatization of Edegel, the Lima power generation company and Chancay, a small power company
FY94	Trinidad & Tobago	T & TEC	Sale of Trinidad and Tobago's electricity generation Company
FY94	Colombia	Central Hidroeléctrica de Betania	Privatization of a hydroelectric power plant
FY94	Venezuela	FIV - Privatization of electricity sector (I & II)	Two general advisory mandate for devising a strategy for the Fondo de Inversiones de Venezuela (FIV) on restructuring and privatizing state-owned electricity companies
FY96	Pakistan	F.A.E.B.	Privatization of the Faisalabad Area Electricity Board (FAEB), one of the eight power distribution companies in Pakistan
FY96	Gabon	SEEG	Privatization of Société d'Energie et d'Eau du Gabon (SEEG), the national water and electricity utility
FY98	Panama	IRHE	Advisory for the marketing and sale of shares in the electric generation and distribution companies that will result from the restructuring of the power sector in accordance with recent legislation
FY98	India	Goa Power	Review of the State of Goa's power sector and assist in the selection of an appropriate privatization model
FY98	Brazil	COELCE (Ceara)	Privatization of Coelce, the Ceará State electric distribution utility, and the establishment of a multi-sector state regulatory agency
FY98	Brazil	COELCE IPP	Structuring an IPP, advising Coelce on the drafting of main contractual documents, assisting in the bid process, negotiations, and closing of the transaction
FY98	Cameroon	SONEL	Privatization of SONEL (Société Nationale d'Electricité), the electric utility company responsible for generation, transmission and distribution

II. Operations undertaken by PSAPT after FY99

<i>Fiscal Year</i>	<i>Country</i>	<i>Project Name</i>	<i>Description</i>
FY01	Georgia	Georgia Power	Privatization of Georgia Power including distribution outside Tbilisi and generation of 5 HPPs with combined installed capacity of 346MW.
FY01	Armenia	Power Distribution	Privatization of Armenia electricity distribution sector.

III. Operations undertaken by IFC Investment Departments

<i>Fiscal Year</i>	<i>Country</i>	<i>Project Name</i>	<i>Description</i>
FY98	Romania	RENEL	Assessment of two projects to be developed as independent power producers (IPPs) and assistance in implementing the privatization transaction phase
FY99	Russia	UES	Advise United Energy System, the nationwide holding company for government assets in electricity generation, transmission and distribution, on its reorganization and the development of a sector restructuring plan

Total = 15 Advisory Assignments

Annex 7. IFC Advisory Operations in Power: Donor-Assisted Technical Assistance Trust Funds (TATF) Operations

<i>FY</i>	<i>Country</i>	<i>Advisory Operations</i>	<i>Advisory Assignments</i>	<i>Total</i>
FY92	Chile	Empresa Pangué	Hydropower Environmental Audit	\$220,000
FY96	Chile		Environmental Capability Assessment	\$100,000
FY92	Costa Rica	Aguas Zarcas Hydroelectric Project	Feasibility Study Update	\$30,000
FY93	Central America Region	BAS Power Generation Project	Sector Study	\$73,200
FY93	Guatemala	Rio Bobos Hydroelectric	Project Preparation	\$30,000
FY93	Nepal	Himal Hydro Project	Environmental & Geological Technical Assessments	\$150,000
FY94	India	St. Lignite Power Plant	Modernization Options	\$77,000
FY95	Selected Countries	Renewable Energy and Energy-Efficiency Fund	Project Preparation	\$85,050
FY96	Gabon	SEEG	Privatization & Restructuring of Water & Electricity Services (Phase 1)	\$263,000
FY97	Gabon		Privatization & Restructuring of Water & Electricity Services (Phase 2 & 3)	\$126,800
FY96	Hungary	Pumped Storage Power Plant	Feasibility Study	\$120,000
FY96	Pakistan	F.A.E.B. Privatization	Review of Legal & Economic Factors-Part 1	\$500,000
FY96	Pakistan		Review of Legal & Economic Factors-Part 2	\$170,000
FY96	Russia	Tomskenergo Energy	Development of an Independent Private Power Project in Siberia	\$400,000
FY97	Russia		Development of an Independent Private Power Project in Siberia	\$22,400
FY97	Brazil	COELCE (Ceara)	Development of a multi-sectoral regulatory entity	\$500,000
FY97	Russia	UES	Power Sector Restructuring	\$350,000
FY98	Russia		Facilitating the Corporate Power Sector Restructuring	\$500,000
FY98	Russia		Facilitating Corporate Restructuring of UES	\$645,000
FY98	Brazil	COELCE IPP	Private Power Generation in Ceara	\$120,000
FY98	Romania	RENEL	Independent Power Producer	\$250,000
FY98	Romania		Power Privatization Accounting Work	\$225,000
FY98	Romania		Two Independent Power Producers Advisory Effort	\$250,000
FY98	Uganda	UGN-8610	Assessment of Hydroelectric Generation Alternatives (Part 1 of 2)	\$100,000
FY99	Uganda		Assessment of Hydroelectric Generation Alternatives (Part 2 of 2)	\$110,000
FY99	Global	Power Conference	Workshop on Orimulsion—an alternative fuel of power generation	\$20,000
FY99	Philippines	Philippine Cooperative Finance Corp (PCFC)	Establishing PCFC to help finance extensive capital requirements of electric cooperatives throughout the country	\$125,300
FY99	Romania	GCP-CPW-Romania	Development of Combined Heat & Power Projects	\$350,000
FY99	Tajikistan	GCP-CPW-Tajikistan (Phase I)	Conducting an Action Assignment to structure, establish & finance an Independent and Autonomous Energy Supply Co. in the region of Gorno-Badakhshan.	\$135,000
Total	FY90-99	20 TA Operations	29 TA Assignments	\$6,047,750

<i>FY</i>	<i>Country</i>	<i>Advisory Operations</i>	<i>Advisory Assignments</i>	<i>Total</i>
FY00	China	Establishment of the First Private Energy Services Company (ESCO)	Develop a comprehensive business plan required for a privately run energy services company (ESCO).	\$111,000
FY00	China	Private Participation in Infrastructure Sector	Assess the legal and regulatory framework for infrastructure including the power sector.	\$280,000
FY00	Nicaragua	Assessment of Hydroelectric Generation Alternative	Review potential hydropower sites in the private sector.	\$203,500
FY00	Poland	Private Financing of Renewable Energy Projects	Review private financing for and promotion of renewable energy and energy efficiency projects.	\$50,000
FY00	Romania	Carbon- Funded Municipal Cogeneration Projects for the Cities of Cluj-Napoca and Targoviste	Phase II to establish two municipal Cogeneration plants.	\$240,000
FY00	Philippines & Romania	Private Financing of Renewable Energy	Review private financing for and promotion of renewable energy and energy efficiency projects.	\$50,000
FY00	Russia	UES (started in FY97)	Privatization Workshop in Moscow. (1 assignment)	\$26,000
FY00	Tajikistan	GCP-CPW-Tajikistan Phase II: assignment A (started in FY99)	Structure, establish, and finance an independent and autonomous energy supply company. (1 of 2 assignments)	\$150,000
FY00	Tajikistan	GCP-CPW-Tajikistan Phase II: assignment B (started in FY99)	Structure, establish, and finance an independent and autonomous energy supply company. (2 of 2 assignments)	\$150,000
FY00	Uganda	UGN-8610 Bujagali Hydropower Projects (started in FY98)	Financial support for Uganda-based NGO representatives and interested parties to attend an international consultation to discuss project impacts and issues.	\$25,000
FY01	Hungary	TA to support Energy Efficiency Financing	Promote and support commercial financing of EE equipment and EE projects.	\$100,000
FY01	Senegal	Study on the Demand for a Supply of Power and the Associated Investments Requirement	Develop a system expansion plan for the electricity sector, and assess the role of international and local IPPs.	\$250,000
FY01	Uganda	URED	Develop a private sector led pilot rural electrification projects.	\$70,000
FY01	Uganda		Develop greenfield rural electrification projects.	\$200,553
Total FY00-01		9 TA Operations	14 TA Assignments	\$1,906,053
TOTAL FY90-01		29 TA OPERATIONS	43 TA ASSIGNMENTS	\$7,953,803

Annex 8. IFC's Operations in Renewable Energy and Energy Efficiency in the 1990s

What are Renewable Energy and Energy Efficiency Operations?

IFC has increasingly financed energy projects that use renewable energy resources and promote efficient use of energy. This subset of projects is generally referred to in IFC as *Renewable Energy* and *Energy Efficiency (RE and EE)* projects. IFC undertakes RE and EE operations directly, in partnership with the Global Environment Facility (GEF), and through financial intermediaries. This work is supported by IFC's Environmental Markets Group (CESEM, formerly Environmental Projects Unit) in the Environment and Social Development Department, the Power Department, and to some extent, the regional and specialist investment departments. *Renewable Energy* projects include technologies such as: run-of-the-river and conventional hydro, geothermal, biomass, wind, and solar (photovoltaic and solar thermal). Investment operations in *Energy Efficiency* are for energy service companies (ESCO), efficiency improvements for distribution and generation companies, industrial projects with EE components, and investment funds focused on energy efficiency projects.

What are IFC's mainstream RE and EE operations?

There are 13 RE/EE projects with a total cost of \$2 billion among the investment operations approved in the 1990s and reviewed in this study. IFC made a total net investment commitment of \$225 million for 10 of these projects, representing 20 percent of IFC's total investment commitments in the power sector in the 1990s. Attachment A lists these 13 mainstream IFC RE and EE operations.

Nine of the 13 RE/EE investment operations are in RE. Of these nine, 8 are hydropower plants and 5 of them are in LAC. Excluding one 450 MW plant, the average size of these hydro plants is 67 MW. IFC has one investment operation in a geothermal IPP that has a generating capacity of 24 MW. IFC has also invested in projects with RE components, such as a sugar mill in LAC that generates power using bagasse. While it is outside the scope of the study (i.e., industrial projects with power components that are less than 50 MW), it is important to note that IFC is showing a lot of interest in this project with a view to replicating it in other investment operations.

There are four IFC investment operations in EE: two in energy services companies and two in focused investment funds. Apart from these four, IFC's 1990s investment operations include projects that have energy efficiency improvement components. Projects in this category include two electricity distribution projects in LAC and several industrial projects where energy is a significant operating cost component, for example, cement, steel, sheet and float glass, automotive tires, etc. Many expansion/rehabilitation projects in these industries have energy efficiency components that are necessary to become competitive against newer and more energy efficient plants. These projects are, however, outside the scope of this study.

Three projects approved in the 1990s were committed in 2000, i.e., outside the review period. IFC's investment commitments for these three projects amounted to \$38 million, comprising two investment funds and one ESCO project. The two investment funds are: (i) \$15 million for a multi-project financing facility to support RE projects focusing primarily on Central America—among the beneficiaries of this facility are two hydropower plants (16 MW and 18 MW) and a wind farm (20 MW) in Costa Rica; and (ii) \$15 million for a \$65–100 million RE/EE global private equity investment fund that will invest in companies using renewable energy technologies and energy efficiency techniques in developing countries. The ESCO project is a multi-project facility for new

ESCOs to serve Central and Eastern Europe and Asia. The first two investments made under this facility are in Hungary and Poland.

What are IFC's energy operations with GEF?

What is GEF? GEF is a financial mechanism established in 1991 by a resolution of the World Bank Executive Directors as a program that provides grants and concessional funds to developing countries for projects and activities designed to protect the global environment. GEF resources address four focal areas considered to be critical threats to the global environment: biological diversity loss, climate change, depletion of the ozone layer, and degradation of international waters. Activities concerning land degradation, primarily desertification and deforestation, as they relate to the focal areas, are also eligible for GEF funding. Currently, there are 166 participant countries.

What is the World Bank Group's Role? The WBG plays two important roles in the GEF. (1) With its long experience in funds management, the WBG was selected trustee of the GEF Trust Fund. (2) As a GEF Implementing Agency, the WBG plays the primary role in ensuring the development, management of GEF investment projects, and mobilizing resources from the private sector. About two-thirds of all project-related GEF resources are allocated to the WBG's GEF portfolio.

What is IFC's role? IFC's Environmental Markets Group (CESEM) is responsible for IFC's operations with GEF. CESEM draws on concessional funding from sources such as the GEF, apart from IFC's own investment resources, toward two main objectives: (a) identifying and developing innovative private sector projects with environmental benefits, and mainstreaming those investments within the private sector and IFC; and (b) integrating active consideration of environmental opportunities into each stage of IFC's project processing cycle, thereby improving the sustainability resource use—ecoefficiency—in IFC's investments.

What are IFC's GEF projects? Over the 1990s, IFC has tapped about \$100 million of GEF funds for seven energy projects in RE and EE. These projects deal with the promotion of efficient lighting, application of photovoltaic technology, and establishment of global funds to support smaller scale initiatives in RE/EE. These projects have been estimated to have a total cost between \$500 million to \$1.1 billion and most have global coverage. In one project (Renewable Energy and Energy Efficiency Fund or REEF), IFC approved a direct investment of \$35 million to supplement GEF funding of \$30 million. Another IFC/GEF jointly funded project (Solar Development Group) was approved by IFC in FY1999 and by GEF in 2001. IFC committed \$6 million for this project while GEF committed \$10 million. A list of IFC-managed GEF projects approved by GEF in the 1990s is in Attachment B. The salient features of these IFC-supported GEF projects are:

1. Energy Efficiency—Promotion of efficient lighting—demand management projects to promote awareness, technology, production and distribution improvements, and use of efficient lighting products such as compact fluorescent bulb.
2. Renewable Energy—Photovoltaic (PV) technology—projects that support photovoltaic -based off-grid power generation; aim to demonstrate viable financial structures and business models as a basis of long-term sustainability and replicability off grid PV power generation.
3. Renewable Energy and Energy Efficiency—Investment Funds—investments in global funds focused on renewable energy and energy efficiency projects.

Attachment A. IFC's Mainstream Renewable Energy and Efficient Energy Projects, FY1990–1999

<i>Approval Year</i>	<i>Commitment Year</i>	<i>Country</i>	<i>Project Name</i>	<i>Project Cost (\$m)</i>	<i>Gross Approval (\$m)</i>	<i>Net Approval (\$m)</i>	<i>Loan (\$m)</i>	<i>Equity (\$m)</i>	<i>Net Commitment (\$m)</i>
FY90	FY91	Turkey	Kepez Electric	67.6	25.0	25.0	25.0	-	20.3
FY91	FY92	Chile	Aconcagua	96.0	39.1	22.1	14.0	8.1	14.5
FY93	FY93	Belize	Becol	59.4	26.0	15.0	15.0	-	15.0
FY93	FY94	Chile	Pangue	515.0	174.9	74.9	70.0	4.9	64.7
FY94	FY94	Costa Rica	Hidrozaracas	15.0	10.5	4.4	4.4	-	4.0
FY94	FY96	Nepal	Khimti Khola/Himal	125.7	36.0	31.0	31.0	-	32.3
FY96	FY98	Nepal	Bhoti Koshi	101.2	78.0	27.0	24.0	3.0	24.0
FY97	FY98	Brazil	Guilman-Amorim	148.0	121.0	30.0	30.0	-	30.0
FY97	FY98	Guatemala	Orzunil	69.0	32.8	17.8	15.5	2.3	14.4
FY97	FY98	India	Asian Electronics Ltd.	86.0	21.6	21.6	16.0	5.6	5.6
FY97	FY00	World	REEF	410.0	115.0	35.0	20.0	15.0	15.0
FY98	FY00	World	Honeywell ESCO-MPF	240.0	60.0	60.0	35.0	25.0	8.0
FY99	FY00	Central America	Energia Global International	15.0	15.0	15.0	10.0	5.0	15.0
Total RE/EE projects = 13				\$1,948	\$755	\$379	\$310	\$69	\$225^a

a. Includes only net commitments made from FY90-99, i.e., the study period. If projects approved in the 1990s but committed outside that period were included, total net commitments would be \$263 million.

Attachment B. IFC-Managed GEF Projects in Power, FY1990–99

<i>Fiscal Year</i>	<i>Country</i>	<i>Project Name</i>	<i>GEF Funding (\$m)</i>	<i>Description</i>
FY94	Argentina	Argentina Street Lighting	0.7	To promote innovative commercial financing and delivery mechanisms for energy-efficient street lighting projects at the municipal level; preparing model transactions for financing on commercial terms by local financial institutions.
FY95	Poland	Poland Efficient Lighting Project (PELP)	5.0	Climate mitigation project designed to reduce electricity consumption.
FY96	World	SME I Program and SME II Replenishment	10.4	To on-lend GEF grant funds to intermediaries toward GEF-eligible small and medium-scale enterprise projects, either with debt or equity investments at long-term low interest rates.
FY97	Hungary	Hungary Energy Efficiency Cofinancing Program (HEECP)	5.0	To build energy efficiency financing capability of Hungarian financial intermediaries.
FY98	World	Photovoltaic Market Transformation Initiative (PVMTI)	30.0	Strategic intervention to strengthen private sector investment in power generation from photovoltaic sources.
FY98	World	Renewable Energy Efficiency Fund (REEF)	30.0	The fund will make debt and equity investments in private sector projects in RE/EE sectors.
FY99	World	Efficient Lighting Initiative (ELI)	15.0	Programmatic elements such as consumer education, financing mechanisms, quality standards and product labeling, market aggregation, transaction support, and regulatory reform assistance.
Total GEF projects = 7			\$96.1	

<i>Fiscal Year</i>	<i>Country</i>	<i>Project Name</i>	<i>GEF Funding (\$m)</i>	<i>Description</i>
FY00	Philippines	CEPALCO-PV	4.03	A 1 MW distributed-generation PV power plant to be built and integrated into the 80 MW distribution network of CEPALCO, a private utility operation in Mindanao, Philippines. The PV system will be operated with an existing 7 MW hydroelectric plant with dynamic load control thereby enabling the joint PV/hydro resource to reduce both distribution-level and system-level demand, effectively providing firm generation capacity. This plant will provide the first full-scale demonstration of the environmental and economic benefits of the conjunctive use of hydro and PV-based power, and the first significant use of the grid-connected PV in a developing country.
FY01	Global	Solar Development Group	6.0	Investment in private companies involved in rural, commercially sustainable PV activities, including the distribution, sale, lease-hire, or financing of PV solar home systems and other productive use of PV systems for electricity generation, and to provide financing to local financial intermediaries who will service such companies.
Total GEF projects, FY90-FY01= 9			\$106.13	

Annex 9. IFC Portfolio of Approvals in Power, FY1990–FY01

<i>Approval FY</i>	<i>Commit- ment FY</i>	<i>Country</i>	<i>Project Name</i>	<i>Total Project Cost (\$m)</i>	<i>IFC Gross Approval (\$m)</i>	<i>IFC Net Approval (\$m)</i>	<i>IFC Loans (\$m)</i>	<i>IFC Equity/ Quasi Equity (\$m)</i>	<i>IFC Net Commitment (\$m)</i>
1990	1991	India	CESC I	92.2	20.1	20.1	20.1	-	24.8
1990	1991	Turkey	Kepez Electric	67.6	25.0	25.0	25.0	-	20.3
1991	1991	India	BSES	653.3	68.0	50.0	50.0	-	50.0
1991	1992	Chile	Aconcagua	96.0	39.1	22.1	14.0	8.1	14.5
1992	1993	India	CESC II	584.7	97.0	30.0	30.0	-	30.0
1993	1993	Philippines	Mindanao Power	126.4	39.0	20.0	15.5	4.5	16.7
1993	1993	Philippines	Pagbilao	888.0	110.0	70.0	60.0	10.0	70.0
1993	1993	Guatemala	Puerto Quetzal	92.7	71.9	20.7	20.7	-	20.0
1993	1993	Latin America	Scudder (SLAP I)	200.0	25.0	25.0	-	25.0	10.1
1993	1993	Belize	Becol	59.4	26.0	15.0	15.0	-	15.0
1993	1994	Argentina	Yacylec	135.0	65.0	20.0	20.0	-	20.0
1993	1994	Chile	Pangué	515.0	174.9	74.9	70.0	4.9	64.7
1994	Dropped	India	Neyveli Power	450.0	198.0	48.0	30.0	18.0	-
1994	1994	Argentina	Edenor	413.9	176.5	48.5	48.5	-	45.0
1994	1994	Costa Rica	Hidrozarcas	15.0	10.5	4.4	4.4	-	4.0
1994	1995	Guatemala	Fabrigas	17.1	7.0	7.0	7.0	-	7.0
1994	1995	World	Global Power	1,000.0	50.0	50.0	-	50.0	19.3
1994	1995	Oman	United (Manah) Power	288.1	77.5	32.5	27.0	5.5	20.5
1994	1996	Nepal	Khimti Khola/Himal	125.7	36.0	31.0	31.0	-	32.3
1994	1996	India	GVK Power	293.2	120.8	50.8	42.5	8.3	37.5
1995	Dropped	India	IB Valley Power	720.6	150.0	70.0	50.0	20.0	-
1995	1995	Pakistan	AES Lal Pir Ltd	343.7	49.5	49.5	40.0	9.5	49.5
1995	1995	Pakistan	Kohinoor	138.6	67.9	31.3	25.0	6.3	31.3
1995	1995	Cote d'Ivoire	Ciprel Power	70.0	17.8	17.8	16.9	.9	19.1
1995	1995	Dominican Republic	Smith-Enron	205.8	133.8	33.8	33.8	-	32.3
1995	1995	Honduras	Elcosa/Elpacsa	71.4	53.7	17.1	14.5	2.6	16.6
1995	1996	Turkey	TDD-KOC/ Entek	136.3	82.0	27.0	27.0	-	27.0
1995	1996	Philippines	Sual Thermal Power	1,400.0	247.5	47.5	30.0	17.5	47.5
1995	1997	Jamaica	JAM/Old Harbour Diesel	148.0	70.0	22.0	22.0	-	23.9
1996	Dropped	Argentina	Edesur	327.6	228.0	40.0	40.0	-	-
1996	1996	Pakistan	AES Pak Gen	349.0	79.5	29.5	20.0	9.5	29.5
1996	1996	Pakistan	Gul Ahmed Energy	138.0	69.1	34.1	30.0	4.1	31.1
1996	1996	Pakistan	Uch Power	630.0	131.0	56.0	56.0	-	40.0
1996	1997	Sri Lanka	Asia Power (APPL)	64.0	37.0	17.0	14.5	2.5	11.0
1996	1998	Nepal	Bhote Khoshi	101.2	78.0	27.0	24.0	3.0	24.0

<i>Approval FY</i>	<i>Commitment FY</i>	<i>Country</i>	<i>Project Name</i>	<i>Total Project Cost (\$m)</i>	<i>IFC Gross Approval (\$m)</i>	<i>IFC Net Approval (\$m)</i>	<i>IFC Loans (\$m)</i>	<i>IFC Equity/Quasi Equity (\$m)</i>	<i>IFC Net Commitment (\$m)</i>
1997	Dropped	México	Altamira	75.3	56.8	18.8	18.8	-	-
1997	1997	Czech Republic	Kladno/ECKG RMF	401.0	135.0	70.0	70.0	-	58.3
1997	1998	India	AEL Asian Electronics	86.0	21.6	21.6	16.0	5.6	5.6
1997	1998	Guatemala	Orzunil	69.0	32.8	17.8	15.5	2.3	14.4
1997	1998	Latin America	Scudder Fund (SLAP II)	250.0	-	-	-	-	-
1997	1998	Brazil	Guilman-Amorim	148.0	121.0	30.0	30.0	-	30.0
1997	1998	Senegal	GTI Dakar	71.1	35.9	24.0	22.1	1.9	14.3
1997	2000	World	REEF—Renewable Energy	410.0	115.0	35.0	20.0	15.0	15.0
1998	2000	World	Honeywell ESCO MPF	240.0	60.0	60.0	35.0	25.0	8.0
1998	1998	Mexico	Merida III	250.0	120.0	30.0	30.0	-	30.0
1998	1998	Russia	Mosenegro	180.0	32.0	32.0	32.0	-	20.0
1998	Closed	Cambodia	CPP	86.0	66.5	21.3	21.3	-	-
1998	Dropped	Russia	Severstal Power	102.0	92.0	25.0	25.0	-	-
1998	Dropped	Vietnam	Ba Ria	112.6	77.2	28.2	24.2	4.0	-
1998	1999	Cote d'Ivoire	Azito	172.6	80.1	45.1	45.1	-	40.5
1998	1999	Bangladesh	Khulna	104.5	56.5	27.1	23.8	3.3	22.5
1999	2000	Bolivia	Electropaz	40.0	25.0	25.0	25.0	-	25.0
1999	2000	Central America	Energia Global International	15.0	15.0	15.0	10.0	5.0	15.0
1999	2000	Venezuela	EDC I	100.0	75.0	40.0	40.0	-	40.0
1999	2001	World	Solar Development Group	50.0	6.0	6.0	-	6.0	5.5
1999	Dropped	Philippines	Cepalco	44.5	22.0	22.0	16.0	6.0	-
1999	pending	Egypt	Sidi Krir	449.0	192.0	70.0	70.0	-	-
Total Investment Operations, FY90-99: 57				\$14,414	\$4,370	\$1,849	\$1,564	\$284	\$1,140¹
2000	FY00	Kenya	Kipevu II	89.2	41.1	21.1	20.0	1.1	17.6
2000	FY00	México	Rio Bravo	234.5	115.0	50.0	50.0	-	50.0
2000	FY00	México	Saltillo SA	160.0	80.0	35.0	35.0	-	35.0
2000	FY00	Georgia	Telasi	146.9	30.0	30.0	30.0	-	30.0
2000	Dropped	Bangladesh	Haripur	183.0	59.9	45.8	45.8	-	-
2000	FY01	Venezuela	EDC II	30.0	30.0	30.0	30.0	-	30.0
2000	pending	Panama	AES Panama	335.9	215.0	45.0	45.0	-	-
2000	pending	India	Astha Power	25.8	9.0	9.0	7.1	1.9	-
2000	pending	India	Orissa NESCO	56.0	28.0	28.0	28.0	-	-
2000	pending	India	Orissa WESCO	43.0	11.0	11.0	11.0	-	-

¹ Net commitment total includes projects approved and committed in FY90–99. If commitments made beyond FY99 were to be included for projects that were approved between FY90–99 (i.e., the study period), total net commitments would be \$1,226 million (as of July 2002 data in MPD).

<i>Approval FY</i>	<i>Commit- ment FY</i>	<i>Country</i>	<i>Project Name</i>	<i>Total Project Cost (\$m)</i>	<i>IFC Gross Approval (\$m)</i>	<i>IFC Net Approval (\$m)</i>	<i>IFC Loans (\$m)</i>	<i>IFC Equity/ Quasi Equity (\$m)</i>	<i>IFC Net Commitment (\$m)</i>
2000	pending	Bangladesh	USPCL	18.5	7.0	7.0	4.0	3.0	
2001	FY01	Moldova	UF Moldova	136.0	25.0	25.0	25.0	-	25.0
2001	FY01	China	Peak Pacific	100.0	25.0	25.0	25.0	-	25.0
2001	FY01	Egypt	Port Said	347.2	200.5	48.0	48.0	-	45.0
2001	FY01	Egypt	Suez Gulf	339.2	200.5	48.0	48.0	-	45.0
2001	FY02	El Salvador	CAESS/EEO	120.0	120.0	45.0	45.0	-	45.0
2001	pending	Brazil	Cataguazes	120.0	85.0	45.0	45.0	-	
2001	pending	India	GI Wind Farms	29.9	10.8	10.8	9.8	1.0	
Total investment operations, FY00-01 = 18				\$2,515	\$1,293	\$559	\$552	\$7	\$348
Total investment operations, FY90-01 = 75				\$16,929	\$5,662	\$2,407	\$2,116	\$291	\$1,596

Annex 10. OEG’s Mini-XPSR Evaluation Framework for IFC’s Electric Power Sector Investment Operations

In the mini-evaluation framework,¹ each investment operation is rated based on three distinct outcomes:

- **Development Outcome**—the project’s impact on a country’s development;
- **IFC’s Investment Outcome**—the operation’s gross contribution to IFC’s income; and
- **IFC’s Effectiveness**—IFC’s contribution to the operation’s outcome.

Each operation is rated on a two-point rating scale: (i) satisfactory or better; and (ii) less than satisfactory.

I. Development Outcome. The development outcome rating is a bottom-line, synthesis assessment of the operation’s results, based on the five development indicators below. It is drawn from an analysis of the projects’ impacts considered on a “with” and “without” project scenario. For example, if “without” the project the country would continue to have power shortages, then the restoration of a stable power supply and its impacts on industry and people’s lives can be attributed to the project.

1. **Project business success.** This rating considers the narrow objectives supported by IFC’s financing. The best measure of a project’s business success is its financial rate of return (FRR). Lacking the complete data to prepare an updated projection and calculate an FRR, we based this rating on assessments of historical performance and likely future trend, with particular emphasis on inputs to FRR calculation, as available (project cost, capacity utilization, tariffs, O&M expenses, taxes, etc.) relative to expectations at appraisal.
 - Rates satisfactory when historical net cash flow is strong and likely to continue, and when actual inputs to an FRR calculation approximate the satisfactory expectations at appraisal.
2. **Growth of the economy.** This rating considers the project’s net economic benefits to all members of society, which is best measured by an economic rate of return (ERR). Lacking the complete data to calculate an ERR, we based this rating on assessments of the inputs to an ERR— the social benefits and costs including consumer surplus, taxes paid, benefits to suppliers, and effects on input and output markets.
 - Rates satisfactory when actual inputs to an ERR approximate the inputs to the net positive economic benefits IFC expected at appraisal.
3. **Living standards.** This rating is based on a project’s benefits and costs to those who are neither owners nor financiers: customers, employees, suppliers, local residents, government, etc. It includes contributions to widely held social objectives such as employment generated, employee living standards, non-wage benefits, training, community services, health and safety, expropriation procedures and resettlement, gender equity, and child labor.
 - Rates satisfactory when there are positive net benefits to those who are neither owners nor financiers of the project.
4. **Project’s Environmental Effects.** This rating is based on the project’s meeting WBG environmental requirements. These requirements include compliance with applicable WBG

¹ This is an abbreviated version of OEG’s XPSR Evaluation Framework.

policies and guidelines as well as controls and mitigation determined as part of project-specific environmental assessment.

- *Rates satisfactory* if the project is—and was over its lifetime—in material compliance with either IFC's current or at-approval requirements.
5. ***Private Sector Development.*** This rating considers, as relevant, the upstream and downstream linkages to private firms, new technology, management skills and training, degree of local entrepreneurship and competition, demonstration effects, enhanced private ownership, capital markets development; and business practices as a positive corporate role model. Included also are regulatory improvements such as changes in government policy and legal, tax, and accounting frameworks.
- *Rates satisfactory when the project provides distinctly positive net contributions.*

II. IFC Investment Outcome. This is a synthesis of the ratings of the two investment instruments: loan and equity. When the individual ratings are different, Investment Outcome rates satisfactory based on the weighted average return on the combined investment. In operations featuring only one investment instrument, the instrument's rating is also the Investment Outcome rating.

1. ***Loan.*** Rates satisfactory or better when no loss reserves exist; not in arrears; any loan rescheduling still provides full margin originally expected; and any loan prepayment provides greater than 65 percent of the originally expected loan income.
2. ***Equity.*** Rates satisfactory or better when investment's realized return, book or market value exceeds cost and gives a return greater than the interest for fixed rate loan.

III. IFC's Effectiveness

IFC's Effectiveness (Synthesis) Rating

- *Rates Satisfactory* if IFC's performance on at least two of the three Effectiveness indicators below is satisfactory.

Screening, Appraisal, and Structuring

- *Rates satisfactory* if it met IFC's good practice standards (for example IFC's Credit Notes).

Supervision and Administration

- *Rates satisfactory* if IFC identified and adequately responded in a timely manner to emerging issues and any material change in the project's and company's performance.

IFC's Role and Contribution

- *Rates satisfactory* if IFC's role and contribution were in line with its operating principles.

Annex 11. Performance Ratings of 29 IFC Mature Power Sector Investment Operations in the 1990s

Project	DEVELOPMENT OUTCOME	Project business success	Private sector development	Growth of the Economy	Living standards	Environmental Impacts	IFC'S INVESTMENT OUTCOME	IFC'S EFFECTIVENESS	Screening, appraisal & supervision	Supervision & Administration	Role & Contribution
Project 1	S	S	S	S	S	S	S	S	S	S	S
Project 2	S	S	S	S	S	L	S	S	S	S	S
Project 3	S	S	S	S	S	S	S	S	S	S	S
Project 4	S	L	S	S	S	S	S	S	S	S	L
Project 5	S	S	S	S	S	S	S	S	S	S	S
Project 6	S	S	S	S	L	S	S	S	L	S	S
Project 7	S	S	S	NOP	NOP	S	S	S	S	S	S
Project 8	S	S	S	S	S	S	S	S	S	S	S
Project 9	S	S	S	S	S	S	S	S	S	S	S
Project 10	S	S	S	S	S	S	S	S	S	S	S
Project 11	S	S	S	S	S	S	S	S	S	S	S
Project 12	S	S	S	S	S	S	S	S	S	S	S
Project 13	S	S	S	S	S	S	S	S	S	S	S
Project 14	S	S	S	S	S	S	S	S	S	S	S
Project 15	S	S	S	S	S	S	S	S	S	S	S
Project 16	S	S	S	S	S	S	S	S	S	S	S
Project 17	S	S	S	S	L	L	S	L	L	L	L
Project 18	S	S	S	S	S	S	S	L	L	L	S
Project 19	S	S	S	S	S	S	S	L	L	L	S
Project 20	S	S	S	S	S	S	L	S	S	S	S
Project 21	S	L	S	S	S	S	L	S	S	S	S
Project 22	S	S	S	S	S	S	L	S	S	S	S
Project 23	S	S	S	S	S	S	L	S	S	S	S
Project 24	S	S	S	S	S	S	L	S	S	S	S
Project 25	S	S	S	S	L	L	L	L	L	S	L
Project 26	L	L	S	S	S	S	S	S	L	S	S
Project 27	L	L	L	L	L	L	S	L	L	S	L
Project 28	L	L	S	S	S	L	L	S	S	S	S
Project 29	L	L	S	L	L	L	L	L	L	S	S

Satisfactory or Better (S)	25	23	28	26	23	23	21	23	21	26	25
Less than Satisfactory (L)	4	6	1	2	5	6	8	6	8	3	4

Satisfactory or Better (S)	86%	79%	97%	93%	82%	79%	72%	79%	72%	90%	86%
Less than Satisfactory (L)	14%	21%	3%	7%	18%	21%	28%	21%	28%	10%	14%

Annex 12. Analysis of Development Outcome Indicators of the 29 Evaluated IFC Electric Power Investment Operations

The Development Outcome of IFC investment operations is a synthesis of the following five performance indicators.

- 1. Project business success**—an indication of the extent to which projects have been a financial success to their lenders and owners.

IFC electric power projects generally have better business success performance than IFC's all-sector portfolio. Of the 29 evaluated IFC electric power projects, 23 (79 percent) are financially successful compared to the all-sector success rate¹ of 45 percent. Overall, IPPs did not perform any better than other projects in the electric power sector. Of the 6 poor business performers, 4 (67 percent) are IPPs although they represent only 62 percent (18 out of 29) of the evaluated projects. While good deal structuring and risk allocation allowed IPPs to shield themselves from regulatory and other risks that they are not best equipped to handle, they were not immune to business and commercial risks. The four IPPs that have failed financially suffered from low dispatch, technical difficulties, and poor hydrology conditions. Capacity fees were not paid in full to an IPP that did not perform all its obligations under the PPA. The three others performed their PPA obligations and received capacity fee payments but did not get a return commensurate to their weighted average cost of capital. They were dispatched significantly below optimum levels due to low demand or inadequate grid capacity. Two IPPs outside the four that performed poorly had marginally satisfactory business success largely because they were dispatched virtually as peaking plants although they were originally designed as base load plants.

Project business success, along with environmental effects, is the lowest rated development outcome indicator in the electric power sector. As is true for other sectors generally, this suggests that electric power projects that do not give their financiers satisfactory returns could still have positive development impacts. This also reflects that investors are last in line in reaping the benefits of these projects.

- 2. Private sector development**— addresses the extent to which the project has encouraged the growth of the country's private sector beyond the project company.

Twenty-eight of the 29 projects (97 percent) have significant positive contributions to private sector development. This compares with the all-sector rating of 75 percent for this development outcome indicator. IFC electric power projects brought about an important *physical infrastructure* for the private sector to thrive and expand. They provided a fast and cost-effective solution to electric power shortages. The evidence is especially strong in power crisis-hit countries (Côte d'Ivoire, Guatemala, and Philippines) where companies were losing markets, and in extreme cases, shutting down because of inadequate electric power supply.

IFC electric power projects have broad *demonstration effects*. The early success of pioneering electric power projects attracted international developers and equipment suppliers to developing countries. These projects have also contributed to enhancing the *enabling environment* for private participation in electric power. They gave the public sector a good experience and first-hand feel of the dynamics and constraints of private sector entities in electric power. IPP contracts help revealed the true unsubsidized

¹ Based on a stratified random sample of 1991–95 approvals evaluated in the 1996–2000 XPSR program.

cost of electric power generation to policy makers and regulators. This experience helped governments establish a framework to attract more competitive private sector proposals in power as well as in other infrastructure subsectors.

3. Growth of the economy—measures the quality of a project’s contribution to a country’s economic growth, as reflected in the economic rate of return (ERR).

Contribution to growth of the economy has been stronger than the all-sector rating of 62 percent satisfactory or better. Twenty-six of the 28 (93 percent)² that were rated for their contribution to growth of the economy had a satisfactory or better performance. This reflects an economic rate of return of at least 10 percent for these projects. End users paid more for electricity or its alternatives during power shortages and they would have continued to do so without the capacity built by the IFC-supported projects. End users who could afford to install their own power generators did so while those who could not turned to other energy sources for lighting and power needs. In both cases, the cost to the users was more than what they paid for electricity from the grid. In one market, industrial consumers value electricity from an IFC project at 40 percent above the actual tariff.³ This premium reflects the value to them of having a reliable and stable source of electric power supply for their industrial production.

The economic value of electric power produced by IPPs operating at optimum plant load factor is generally considered higher than the price at which IPPs sell to offtakers. In the absence of market-specific consumer surplus estimates in most cases, the economic price of electricity has been conservatively estimated in XPSRs to equal the average end-user tariffs. Projects evaluated through XPSRs showed that this estimate was sufficient to yield an ERR of at least 10 percent based on actual output and after allowing for transmission costs, including losses. The economic value of electric power generated by projects operating as peaking plants has been based on the average of the highest tariffs during peak hours. Without these “peaking plants,” industrial and commercial consumers would have either lost production or had to install their own generation facility at very high cost to ensure an uninterrupted supply of electricity during peak hours.

The two projects that had less than satisfactory contribution to growth of the economy have also failed financially. However, four other projects that have poor financial performance have satisfactory contributions to growth of the economy, suggesting that the economy can benefit from electric power projects even in situations where financiers are not successful.

4. Impact on living standards— measures a project’s net contribution to members of society other than its owners or financiers, such as customers, suppliers, employees, and governments or taxpayers.

Twenty-three of the 28 projects (82 percent) with living standards ratings did well, mirroring IFC’s all-sector performance. IFC electric power projects affect living standards at two levels: immediate, or at the local community level; and widespread, or its entire customer base:

(a) *The local community.* Job creation is perhaps the most important impact on living standards in the local communities where IFC electric power projects are located. The impacts are more visible in

² One project cannot be rated due to insufficient information.

³ Based on an IFC interview of major industrial users. This interview was undertaken as part of an XPSR field visit.

rural areas where IFC projects easily become the biggest employer. In most IFC-financed projects, suitably qualified locals are given priority in hiring. At the suggestion of some IFC project companies, villagers formed cooperatives that serve as sub-contractors in non-critical support functions such as ground maintenance, security, janitorial services, and cafeteria operations. Salaries and benefits are typically better than their alternative employment opportunities. An IFC-financed 700 MW power plant in a remote rural location has about 450 direct and another 400 indirect employees. In addition to direct and indirect employment at the plant, there is additional employment generated at the local and industrial power consumers.

Other demonstrated impacts on local communities include:

- Development of a project required infrastructure of roads and bridges that are also open to villagers. Such infrastructure has given farmers access to new markets and has enabled children to attend schools outside their village.
- Many project companies in rural areas provide free healthcare services by giving the villagers access to plant-site medical clinics.
- Companies support community development programs by sponsoring village school activities, sports events, livelihood projects, reading programs, and skills development. An IFC-financed IPP in Asia built a community center, equipped it with sewing machines, trained the village women, and helped them market their output.
- Some IPPs provided power line connections in the neighboring villages, which enabled the local distribution company to extend service to these villages.

(b) *Widespread impact.* The most important impact observed in IFC-financed generation projects is the provision of a reliable, stable, and reasonably priced electric power supply to industrial/commercial and residential customers. For industrial/commercial customers, this translates into resumption of normal or even expanded operations, leading to additional employment opportunities, especially at the shop-floor level where many low-wage earners, i.e., the poor, work. Residential customers at all income levels benefit from a stable electric power supply. Without these IPPs, the poor, unlike the rich, would have no electricity since they cannot afford to have their own power generator sets.

IFC-financed projects helped increase access to electric power. In LAC, IFC financed a distribution company's post-privatization expansion that enabled the company to expand access to the urban poor who previously obtained electric power through illegal and unsafe connections. Without the project, the poor had to pay more to the "right people" to ensure that the state-owned utility company does not discover the illegal connections. Because the illegally connected households paid a flat fee for their un-metered connection, they tended to have wasteful electric power consumption. An IFC-financed IPP project in Sub-Saharan Africa has given the privately managed utility company the generation capacity to expand the national grid to provide electric power to some 1.8 million people in 1,100 rural districts out of a total of 8,000 districts currently connected to the grid

5. Environmental, social, health and safety (ESHS) effects—reflects a project's impacts on its physical environment as well as social, cultural, worker health and safety, and resettlement issues, all as addressed in IFC's safeguard policies.

IFC requires all its projects to comply with IFC environmental and social guidelines, which are internationally accepted. Out of 29 evaluated projects, 23 (79 percent) are rated as satisfactory or better, compared with 66 percent of the total evaluated population of IFC investments. Annex 17 provides a more detailed discussion of the environmental impacts of IFC projects.

Annex 13. MIGA Guarantees in Power, 1999–2001

Issuance of MIGA Guarantees for Electric Power Projects from FY1990—FY2001						
as of 6/30/2001						
<i>Investor</i>	<i>Project Enterprise</i>	<i>FY</i>	<i>Host Country</i>	<i>MAL (US\$)</i>	<i>FDI (US\$)</i>	<i>Status of Guarantee</i>
The National Grid Company PLC	Compania Inversora en Transmision Electrica Citelec S.A.	94	Argentina	15,000,000	80,956,000	Cancelled
Wartsila NSD Power Development, Inc.	Electricidad de Cortes S.de R.L.de C.V.	95	Honduras	1,958,823	71,235,292	Active
Wartsila Diesel Development Corporation, Inc.				27,000,000		Cancelled
Illinova Generating Company				4,025,000		Active
Scudder Latin American Trust				5,975,000		Active
Internationale Nederlanden Bank, N.V.				9,000,000		Active
Mees Pierson N.V.				9,000,000		Active
Hydra-Co Enterprises, Inc.	Jamaica Private Power Company Limited	95	Jamaica	25,508,032	144,200,000	Active
Energy Investors Funds II, L.P.				8,147,861		Active
International Energy Partners L.P.				2,583,704		Active
Rockfort Power Associates, Inc.				12,473,389		Active
USEC-Precursor, Inc.				1,287,014		Active
Magma Netherlands, B.V.	California Energy Corporation, Inc./ Visayas Geothermal Power Company	95	Philippines	30,000,000	280,000,000	Cancelled
Wartsila Diesel Development Corporation, Inc.	Jamaica Energy Partners, LP.	96	Jamaica	5,171,035	98,994,000	Active
Wartsila Power Development Inc.				12,647,536		Cancelled
Barge Energy, L.L.C.				3,045,357		Active
Illinova Generating Company				3,045,357		Active
Scudder Latin American Power I-C, L.D.C.				60,908		Active

Issuance of MIGA Guarantees for Electric Power Projects from FY1990—FY2001						
<i>as of 6/30/2001</i>						
Investor	Project Enterprise	FY	Host Country	MAL (US\$)	FDI (US\$)	Status of Guarantee
Scudder Latin American Power I-P, L.D.C.				6,029,807		Active
Boeing Capital Corporation		97		14,365,636		Active
New World Power Corporation	New World Power Investment, S.A.	96	Argentina	2,250,000	9,100,000	Cancelled
Atlantic Commercial Finance B.V.	Hainan Meinan Power Company CJV	96	China	16,700,000	147,500,000	Active
Capital Indonesia Power I C.V.	P.T. Paiton Energy Company	96	Indonesia	50,000,000	2,496,308,000	Active
Statkraft SF				29,227,063		Active
ABB Kraft	Himal Power Limited	96	Nepal	1,800,000	122,400,000	Active
Kvaerner Energy A.S.				1,800,000		Active
Ormat Holding Corp.	Orzunil I de Electricidad, Limitada	97	Guatemala	4,484,838	65,601,102	Active
Ormat Holding Corp.		99		8,453,894		Active
ING Bank, N.V.		2000		1,575,000		Active
				11,800,000		Active
OPIC/Houston Industries Energy Cayman Inc.	Light Servicios de Electricidade S.A.	97	Brazil	7,500,000	1,158,000,000	Cancelled
OPIC/AES Coral Reef L.L.C.				7,500,000		Active
Wartsila Power Development, Inc.	Tapal Energy Limited	97	Pakistan	2,000,000	119,892,000	Active
Sithe International, Inc.		98		8,000,000		Active
Enron Corporation	Enron Java Power Corp.	97	Indonesia	15,000,000	437,625,000	Cancelled

Issuance of MIGA Guarantees for Electric Power Projects from FY1990—FY2001						
as of 6/30/2001						
Investor	Project Enterprise	FY	Host Country	MAL (US\$)	FDI (US\$)	Status of Guarantee
El Paso Energy International Company	Fauji Kabirwala Power Company Limited.	97	Pakistan	16,110,000	150,700,000	Active
Cogen Technologies Saba Power, LP	Cogen Technologies Saba Capital Company, L.L.C./Saba Power Company	97	Pakistan	5,000,000	138,341,500	Active
Coastal Wuxi Power, Ltd.	Wuxi Huada Gas Turbine Electric Power Company	97	China	4,212,000	15,600,000	Active
				9,342,000		Active
Coastal Suzhou Power Ltd.	Suzhou Coastal Cogeneration Power Plant.	98	China	17,655,300	19,617,000	Active
ERI Holdings II	Compania Hidroelectrica Dona Julia, S.R.L.	98	Costa Rica	2,203,200	28,946,000	Active
Scotia Mercantile Bank				9,225,000		Active
Nordic Power Invest AB	Compañía Boliviana de Energía Eléctrica S.A.-Bolivian Power Co. Lmtd. (COBEE-BPC).	98	Bolivia	62,500,000	200,000,000	Cancelled
El Paso Energy International Company	Compañias Asociadas Petroleras S.A. (CAPSA) and its subsidiary CAPSA Exploradora S.A. (CAPEX).	98	Argentina	22,580,000	538,000,000	Active
				17,617,500		Cancelled
Nissho Iwai Corporation	Asia Power Private Limited	98	Sri Lanka	1,686,204	61,145,080	Active
El Paso Energy International Company	Energy Center Kladno Generating, s.r.o.	98	Czech Republic	24,808,455	278,416,000	Active
				5,581,485		Active
Wartsila Vietnam Power Investments Ltd.	Vung Tau Energy Company Limited (Vietnam)	99	Vietnam	36,000,000	113,000,000	Active
Coastal Nanjing Power Ltd.	Nanjing Coastal Xingang Power Plant	99	China	20,693,638	26,846,000	Active
Coastal Gusu Heat and Power Ltd.	Suzhou Suda Cogeneration Power Co., Ltd.	99	China	10,759,500	11,955,000	Active
Coastal Power Khulna Ltd.	Khulna Power Company Ltd.	99	Bangladesh	29,340,000	95,000,000	Active
Dunriding Company N.V.	Termotasajero S.A. E.S.P.	99	Colombia	62,415,000	69,350,000	Active

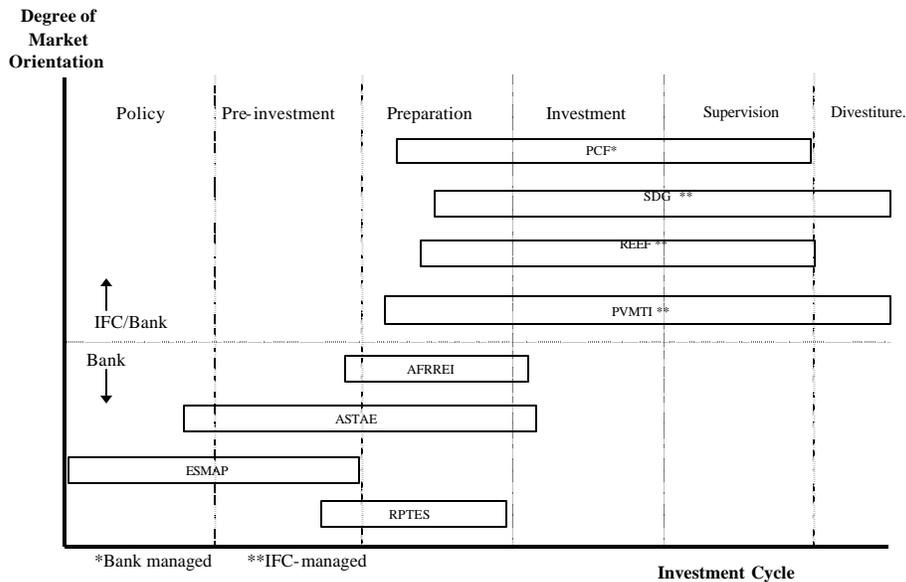
Issuance of MIGA Guarantees for Electric Power Projects from FY1990—FY2001						
<i>as of 6/30/2001</i>						
Investor	Project Enterprise	FY	Host Country	MAL (US\$)	FDI (US\$)	Status of Guarantee
Banco Santander Central Hispano S.A.	Companhia de Interconexao Energetica (CIEN)	2000	Brazil	37,000,000	258,000,000	Cancelled
Endesa International S.A.				28,000,000		Cancelled
Banco Santander Central Hispano, Credit Agricole Indosuez				50,000,000		Active
VBC International Corporation	VBC Energia S.A.	2000	Brazil	100,000,000	200,000,000	Active
Ormat Holding Corporation	OrPower 4, Inc	2000	Kenya	37,490,000	30,956,000	Active
Ormat International, Ltd.	Ormat Momotombo Power Company (Campo Momotombo)	2000	Nicaragua	81,409,400	64,749,000	Active
Bank Hapoalim B.M.		2001		63,311,250		Active
Coastal Power Dominicana Generation Ltd.	Empresa Generadora de Electricidad Itabo, S.A.	2000	Dominican Republic	90,000,000	177,780,000	Active
BCH International Puerto Rico Inc.	Consorcio Energetico Punta Cana—Macao, S.A.	2000	Dominican Republic	11,100,000	14,627,143	Active
Hydro-Quebec International, Inc	Consorcio Transmantaro S.A.	2000	Peru	61,150,000	151,600,000	Cancelled
				20,187,500		Cancelled
				16,150,000		Cancelled
				24,225,000		Active
Eskom	Motraco-Mozambique Transmission Company S.A.R.L.	2000	Mozambique/Swaziland	32,000,000	84,400,000	Active
				37,400,000		Active
Citibank, N.A.	Light Servicos de Eletricidade, S.A.	2001	Brazil	23,000,000	200,000,000	Active

Issuance of MIGA Guarantees for Electric Power Projects from FY1990—FY2001						
<i>as of 6/30/2001</i>						
<i>Investor</i>	<i>Project Enterprise</i>	<i>FY</i>	<i>Host Country</i>	<i>MAL (US\$)</i>	<i>FDI (US\$)</i>	<i>Status of Guarantee</i>
Union Fenosa Internacional S.A.	Distribuidora Electrica de Oriente S.A. (DEORSA) and Distribuidora de Electricidad de Occidente, S.A. (DEOCSA)	2001	Guatemala	96,570,000	107,300,000	Active
Union Fenosa International S.A.	Retelele Electric Distributie Chisinau S.A.; Retelele Electric Distributie Centru S.A.; Retelele Electric Distributie Sud S.A.	2001	Moldova	61,092,000	136,000,000	Active
Construtora Norberto Odebrecht S.A.	Hidropastaza S.A.	2001	Ecuador	150,000,000	254,770,000	Active
72 Contracts 39 Projects 25 Countries				1,742,229,686	\$8,658,910,117	

Annex 14. World Bank Group Involvement in Renewable Energy and Energy Efficiency Projects

1. During the 1990s, renewable energy and energy efficiency (or “alternative energy”) have grown significantly as innovative components of WBG energy activities. Bank and IFC initiatives reflect each institution’s mandate: the Bank worked mainly with the public sector to achieve policy reforms, strengthen institutions, define legislative frameworks, and establish regulatory processes to provide the enabling environment for private participation, while IFC provided loans and equity financing directly to the private sector. As shown below,¹ their financial assistance and AAA show a similar general division of labor, with the Bank focused on upstream policy and pre-investment activities, and IFC concentrated on investment and divestiture; this is also evident from the implementing agencies of Bank and IFC projects with photovoltaic components, as shown in.

The Bank and IFC Division of Labor Is Also Evident in Renewable Energy Activities



PCF: Prototype Carbon Fund; SDC: Solar Development Corporation; REEF: Renewable Energy and Energy Efficiency Fund; PVMTI: Photovoltaic Market Transformation Initiative; AFRREI: Africa Rural and Renewable Energy Initiative; ASTAE: Asia Alternative Energy Program; ESMAP: Energy Sector Management Assistance Program; RPTES: Regional Program on the Traditional Energy Sector.

2. There is no institutionally agreed definition for the hydropower component of renewable energy. The Bank includes only mini- and micro-hydro (less 1 MW) and treats large hydro as “conventional generation,” while IFC includes all hydro in its accounting for its renewables portfolio (the average size of IFC-financed hydropower plants is 67 MW, excluding one 450-MW plant in LAC). This issue needs to be resolved given large hydro’s attendant social (resettlement) and environmental issues that are not normally associated with village-scale, decentralized renewable energy systems. Moreover, it will not be possible to evaluate the significant and innovative PSD components of this alternative energy portfolio unless a common definition is agreed within the WBG.

¹ R Spencer (2000) Briefing Note: The Bank and Renewable Energy (draft paper), World Bank, p.3.

3. There are also no data on the full extent of the Bank's support for alternative energy. However, it is known that through the Asia Alternative Energy Program (ASTAE), Energy Sector Management Assistance Program (ESMAP), Africa Rural and Renewable Energy Initiative (AFFREI), and Regional Program for the Traditional Energy Sector (RPTES), the Bank finances (including GEF grants) and provides technical assistance to governments to develop and implement renewable energy systems, promote energy efficiency, build long-term capacity, and expand energy access. ASTAE data is the most robust: its portfolio of alternative energy projects for FY1993–2003 has grown to 37 renewable energy and energy efficiency projects in 11 Asian countries, with a total alternative energy project cost of US\$3.8 billion and total Bank/GEF commitments of up to US\$1.5 billion. ASTAE's alternative energy program integrates significant technology and policy reform measures.

4. IFC works farther downstream through the Solar Development Group (SDG), Renewable Energy and Energy Efficiency Fund (REEF), and the Photovoltaic Market Transformation Initiative (PVMTI)² and directly invests in financially viable renewables and energy efficiency projects, provides financing for the development of private sector activities in the distribution and retail of off-grid applications, and extends concessional financing for the development of photovoltaic markets. In the 1990s, IFC made a total investment commitment of \$225 million in 13 projects, and managed 7 GEF-funded projects. These investments represent 20 percent of IFC's total investment commitments in the power sector by FY99. Eight of these investments are in hydropower plants and 5 are in LAC. IFC has two investment commitments in the non-hydro renewables subsector: a 24-MW geothermal plant and a 45-MW bagasse co-generation plant as part of an investment operation in a sugar mill.

5. As in other sectors, IFC invests in financial intermediaries for on-investing to smaller alternative energy projects. IFC has committed US\$15 million for a multi-project financing facility to support alternative energy projects focusing primarily on Central America. Among the beneficiaries are two hydropower plants (16 MW and 18 MW) and a wind farm (20 MW) in Costa Rica. In addition, IFC made an investment commitment of US\$15 million for a US\$65 to US\$100 million alternative energy global private equity investment fund with a parallel debt facility and a GEF cofinancing arrangement.

² Respectively, the Solar Development Corporation (SDC), the Renewable Energy and Energy Efficiency Fund (REEF), and the Photovoltaic Market Transformation Initiative (PVMTI).

Annex 15. ASTAE-supported World Bank/GEF Alternative Energy Investment Projects, FY1992–2003

Country	Project	Technical Assistance and Policies				Technologies				
		Training & Capacity Building	Renewable Energy Master Plan	Small Power Purchase Agreement	Tariff & Duty Adjustment	Photo-voltaic	Hydro	Wind Power	Biomass Power	Geothermal ^c
China	Renewable Energy Resources	•	•		•	•		•		
Indonesia	Second Rural Electrification	•	•	•	•		•			•
	Solar Home Systems	•	•			•				
Lao PDR	Southern Provinces Rural Elect.	•	•			•	•			
Vietnam	Power Development	•	•							
Vietnam	Rural Energy I	•	•	•		•	•			
India	Renewable Resources Development	•				•	•	•		
India	Renewable Energy II/Energy Efficiency	•		•	•		•			
Sri Lanka	Energy Services Delivery	•		•	•	•	•	•		

Includes:

^a Institutional strengthening activities; ^b small- mini-, and micro-hydro; and ^c small-, mini-, and micro-geothermal

Annex 16. Technology and Policy Reform Measures in ASTAE-Supported Renewable Energy and Energy Efficiency Projects*

Country	Project	Technical Assistance and Policies					Technologies					
		Training & Capacity Building	DSM Plans ^a	Load Research ^b	Codes & Standards ^c	ESCO Dev.	Load Mgmt.	Motors	Light-ing	Appli-ances	HVAC ^d	Cogen. ^e
China	Energy Conservation	•				•		•	•			•
Lao PDR	Provincial Grid Integration	•				•		•				
India	Orissa Power Sector	•	•	•			•	•			•	
	Haryana Power APL	•	•	•		•	•	•		•		•
	Andhra Pradesh Power APL ^f		•	•		•	•	•	•		•	
	Renewable Energy II/Energy Efficiency	•				•	•	•	•		•	•
Sri Lanka	Energy Services Delivery	•	•	•	•				•	•	•	
Thailand	Distribution System & Energy Efficiency		•	•	•		•	•	•	•	•	
	Metropolitan Distribution			•		•				•		
Vietnam	Transmission & Distribution	•	•	•			•	•	•			

* ASTAE: Asia Alternative Energy Unit

Includes:

^a monitoring and evaluation; ^b institutional strengthening activities; ^c energy efficiency building codes and equipment standards; ^d vapor absorption technology; ^e industrial and biomass cogeneration; and ^f TA and technology for the entire APL program.

Annex 17. Environmental and Social Impacts of IFC Investment Operations in the Power Sector

Note: A separate background paper was prepared for the Bank entitled “Environmental Mainstreaming and Private Sector Development in the Electric Power Sector: A Review of the World Bank’s Policies and Performance.”

I. Environmental Performance of IFC Projects

The environmental performance of IFC’s investment operations in the power sector has been better than IFC’s all-sector portfolio.

1. Of the 29 evaluated projects, 23 (79 percent) have met or exceeded IFC’s environmental requirements compared to 68 percent for all of IFC evaluated projects from the 1991 to 1996 approvals population. Based on the site visits conducted as part of the field assessments, the drivers for this successful outcome appear to be the following:

- Environmental requirements are specifically built into the plant design criteria;
- Environmental performance criteria are an explicit aspect considered in Project Completion tests;
- Power plants are technologically driven—once you get it right (designed and built) it is highly likely that it will be operated within IFC/WB guidelines;
- At the national level, IPPs are sufficiently large that they are audited by national environmental agencies; and
- Global power project sponsors generally operate in an environmentally responsible manner when they do projects overseas, due to their own reputational risks.

What are the shortcomings in environmental performance of IFC projects in the power sector?

2. As in any other sector, power has its share of projects with less than satisfactory environmental performers. An analysis of the six projects that are rated less than satisfactory, points to two major reasons:

- Inadequate attention to social issues;
- Inadequate environmental controls incorporated into the design to fully meet IFC/WB emissions standards.

3. In the last 4 to 5 years, IFC has expanded its social soundness reviews to better address social issues, partly as a direct result of a hydro-project in LAC, where social and resettlement issues were not adequately addressed. Actions taken have included additions of specialist staff and development and promulgation of guidance documents in key social development areas such as resettlement and public consultation.

4. Two projects could not meet the at approval or current IFC/WB emissions standards. In both cases, it was a design failure. Environmental performance criteria are critical in the design and approval of power sector plants, but environmental performance issues may be less well managed for co-generation and captive power plants that come under IFC’s other sectors (food and agriculture, general manufacturing, chemicals, etc.), which are not considered within the scope of this report.

5. There remains a huge untapped potential for “doing good,” i.e., beyond “doing no harm” on environment:

(i) *The system dispatch priority should consider environmental impacts.*

A system with sufficient new capacity has more flexibility to manage least-cost and environmentally responsible dispatch of its power plants. Better environmental management is possible, depending on the technologies, plant alternatives, and contractual constraints involved. Environmental outcomes are inferior when supply is constrained and system dispatch is poorly managed because older and more polluting capacity is called into longer periods of production.

(ii) *Projects can be more environmentally responsible by going beyond the fence line.*

Current industry practice delineates a “fence line” around a project; i.e., there is an imaginary or real fence line around the site. Activities outside the fence line are not considered as part of project impacts. This is an area where IFC can add value in the future. Two specific examples, both from actual projects in a case study country:

- Most IPPs sell power directly to the grid via a substation at the plant. The government, or where it exists, the transmission company, owns the high-voltage transmission lines and is therefore responsible for any associated impacts from the transmission lines. In one observed project, the high-voltage transmission lines leaving the plant, joined with those from an adjacent government-owned plant and then continued directly over a neighboring slum in a major city. Houses were located immediately under the transmission lines. The potential impacts from electro-magnetic fields are still open for debate, but these lines also presented a direct safety hazard to the slum residents. Normally, high-voltage lines pass through a safety corridor.
- There are several ways for fossil fuel-based plants to receive their fuel, including: pipelines, railways, and trucks. In one country, a World Bank-financed plant received fuel via a pipeline; an IFC-financed plant received fuel via rail; and three plants (one World Bank and two IFC) received fuel via trucks. One plant receives approximately 80 fuel trucks per day, each of which traveled over 200 kilometers from the fuel depot to the plant. This level of truck traffic presents a safety issue to the small villages and communities through which the trucks pass as well as CO₂ emissions potentially comparable to that of the power plant being served. Further, there was little control over truck maintenance. Trucks were being maintained and washed at small service points, with the waste oil and oily wastewater being discharged on the ground and into drainage ditches. As the trucks are under a supply contract, they are considered outside the fence line, yet their only business is to supply fuel to the power plants. Current operating practices of these private trucking fleets is causing significant negative environmental impacts. Establishing improved truck maintenance facilities has the potential to create an additional private sector business opportunity, while helping to protect the environment, and reduce the costs through improved waste oil recovery and recycling. While a pipeline remains the optimal option, over the long term, rail appeared to be the least cost option that minimized environmental impacts to an acceptable level. However, better management of the tracking system provides flexibility and could lead to an improved environmental outcome.

II. The GHG Impacts of IFC Projects and Implications

IFC has existing policies on GHG emissions

6. IFC's policies and position with respect to Green House Gas (GHG) emissions are captured in the 1998 Pollution Prevention Handbook (PPAH): [http://wbIn0018.worldbank.org/essd/essd.nsf/GlobalView/PPAH/\\$File/29_gas.pdf](http://wbIn0018.worldbank.org/essd/essd.nsf/GlobalView/PPAH/$File/29_gas.pdf).

7. The three GHGs of importance are carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O). GHGs are perceived to have a direct impact on climate change, and 80 percent of GHGs are generated from human activities, and in particular from the burning of fossil fuels. IFC's 1998 guidance reflects the then-current developments of the UN Framework Convention on Climate Change (UNFCCC), but failure of ratification of the Kyoto Protocol over U.S. objections, is changing the debate. IFC's guidelines on energy efficiency are also captured in the 1998 Pollution Prevention Handbook (PPAH): [http://wbIn0018.worldbank.org/essd/essd.nsf/GlobalView/PPAH/\\$File/8_energy.pdf](http://wbIn0018.worldbank.org/essd/essd.nsf/GlobalView/PPAH/$File/8_energy.pdf).

What is expected from host countries of IFC investments in the power sector?

8. First, it is important to recognize that the Kyoto Protocol differentiates between "transition economies," "developing countries," and "least-developed countries." While IFC is active in all three country categories, the power sector portfolio is concentrated in the developing countries group. The Kyoto Protocol is primarily aimed at achieving reductions in Part I (developed countries) and transition economies, and recognizes that continued growth of energy use is critical to the economic growth of developing nations. Under the Clean Development Mechanism (CDM), it is recognized that the cost of pollution control is significantly less in developing nations than in Part I nations. For these reasons, IFC's client countries do not have established emission reduction targets, but CDM provides a financial incentive to achieve emissions reductions.

The GHG emissions of IFC-financed power projects are relatively immaterial

9. Using proprietary software developed for IFC, called IMAGE, IFC has calculated its net contribution to GHGs resulting from use of fossil fuels. These results are conservative, that is, they assume that all plants would operate at the designed 70 percent capacity factor; however, they do not take into account indirect emissions (such as methane emissions from coal mines) or line losses as such losses are beyond the fence lines of IFC projects. The following table summarizes the total GHG emission of IFC-financed fossil fuel-based power plants.

GHG production by type of thermal generating unit and fuel type, for the portfolio of projects considered in this review.						
Technology	Fuel Type	Total Installed Capacity—MW	CO ₂ Emissions			
			tons-C/year	tons-C/year/GW	tons-CO ₂ /year	tons-CO ₂ /year/GW
Diesel Generation	HFO	668	927,000	1.39	3,573,000	5.35
Thermal Generation	Gas/naphtha	1,861	1,686,000	0.91	6,183,000	3.32
Thermal and Steam Generation	Coal	2,650	4,443,000	1.68	16,290,000	6.15
Thermal and Steam Generation	LFO and HFO	844	1,109,000	1.31	3,766,000	4.46

10. The total GHG emission of the 21 fossil fuel-fired power plants approved in the 1990s and in IFC's portfolio as of December 31, 2001, was calculated as equivalent to 0.2 percent of the 1998 global emissions from fuel combustion (22,700 million ton-CO₂) and 0.4 percent of the 1998 developing countries' emissions from fuel combustion (8,600 million ton-CO₂).

11. IFC's power sector projects achieve the least impact (tons of CO₂/year/installed MW) with the gas/naphtha-fired generators. Coal-fired steam boilers are the least efficient in terms of GHG production.

How can IFC most effectively contribute to GHG reduction while meeting the energy needs of the countries in which its projects are located?

12. Moving to renewable energy and cleaner fuels (gas) provide the largest gains in GHG reduction. However, power plants are located and designed based on fuel or resource availability, cost, fuel diversification, and environmental considerations. In most cases, coal has been the best option in the 1990s.

13. Greater fuel efficiency has a direct impact on GHG reductions. There has been a significant improvement in overall energy efficiency. For a coal-fired power plant, an increase in efficiency from 40 to 41 percent reduces emission of CO₂ by 2.5 percent. New coal-fired power plants can achieve efficiencies of 42–45 percent.

14. To reduce GHG production, IFC should look at both fuel selection and power plant design (efficiency). Depending upon the age of the plant, it may even be cost effective to replace older, less efficient plants with modern, more efficient plants, with GHG reduction being a side benefit. In addition, IFC recently established a Dutch-funded CDM facility to help promote pollution trading.

III. Recommendations: Win-Win opportunities for going beyond “doing no harm” to “doing good”

On reforming the sector:

15. In reforming a country’s power sector, a program to replace older, less efficient plants with modern, more efficiency plants should be considered. Older plants tend to be state owned, therefore this is a possible policy approach to privatization, which could reduce overall costs and improve environmental quality.

On environmental aspects:

16. Where logistically and financially feasible:

- Move to cleaner fuels (fuel selection) and renewable energy options;
- Promote more efficient plants;
- Promote system optimization; and
- Go beyond the fence line.

On social aspects

17. Possible solutions to social concerns are to:

- Advise sponsors on site selection by helping them understand the social and environmental issues associated with specific sites under consideration. Note, however, that this is often difficult when IFC may be brought into a deal well after the siting decision has been made.
- Focus on community participation early in the process;
- Promote social responsibility to ensure beneficiaries are both local communities and regional and national populations.

Annex 18. World Bank Group Management Response and Management Action Record

WORLD BANK GROUP MANAGEMENT RESPONSE

I. INTRODUCTION

1. Management commends OED/OEG/OEU for this thorough review of private sector development in the electric power sector (PSDE) and for taking into account staff comments and concerns. The review analyzes a decade of World Bank Group (WBG) experience, and it offers some valid criticisms and three challenging recommendations.

2. ***Significant Change in the PSDE Environment.*** The period covered by the review saw significant change in private sector involvement in the power sector: considerable foreign investment increases during the earlier part of the decade were followed a rapid decline from 1997 onward. Against this background, the findings of the OED/OEG/OEU review are timely and will help the WBG to formulate its strategy.

II. OED/OEG/OEU FINDINGS

3. Management concurs with the conclusion of OED/OEG/OEU that the WBG should continue to support private sector development in the electric power sector. Management also shares the review's assessment of the challenge to promoting private sector development in the electric power sector: the required reforms are both complex and resource-intensive, especially in the distribution sector, and approaches need to be tailored to the circumstances of individual countries. The review rightly notes that successful PSDE reforms and good performance require government commitment based on constituencies for reform established through civil society participation. Management welcomes the assessment that the Bank, pursuing multiple and complex reform objectives through a range of instruments across all Regions, achieved good results when country ownership and political commitment existed. IFC and MIGA—responding to market demand and focusing on the single reform objective of private sector participation—achieved good project-level outcomes overall.

III. MANAGEMENT'S VIEWS

4. To improve the impact of World Bank Group PSDE assistance, the OED/OEG/OEU review recommends developing operational guidance, mainstreaming environmental and poverty reduction objectives, and encouraging operational innovations. Management has recognized the issues that prompt these recommendations and, as is indicated in the following paragraphs, has already begun to formulate responses along the lines the review suggests. (The responses to the specific recommendations are set out in the accompanying Management Action Record matrix appended as an annex.)

5. ***Need for Operational Guidance.*** The OED/OEG/OEU review recommends that operational guidance be provided to staff on when and how to promote PSDE in an environment of heightened macroeconomic and political risks and scant investor interest. Management agrees with this recommendation, and the Energy Sector Anchor is preparing a Guidance Note to complement the many other learning mechanisms already in place. This Note, which will be delivered in early FY04, will address the respective roles of the Bank, IFC, and MIGA. The note will be grounded on the

World Bank Group's policy adopted in 1993 by placing PSDE in the context of achieving commercialization and promoting competition under transparent regulation. It will also focus on the urgent issues associated with arresting the decline in PSDE and improving governance, including management of the transition to a sustainable environment for PSDE.

6. ***Guidance Differentiated by Country Conditions.*** The note will reflect experience with PSDE that highlights the importance of strengthening governance structures (including regulation, protection of investor rights, and implementation of internationally recognized accounting and auditing principles) before privatization. It will advise that each country's program for reforming its power sector according to this policy should be tailored to the particular economic, technical, political and social conditions of the country at the start of the reform process. The note will therefore avoid a "cookbook" solution for power sector reform that ignores these conditions. It will provide the following two examples of country typology.

- ***Large Countries:*** For relatively large and advanced countries, the focus would be on unbundling of the sector (through legal or ownership separation), the level and structure of tariffs, regulated third party access to the transmission and distribution wires services by public and private service providers, privatization of viable or potentially viable generation and distribution entities to foster the efficiency gains expected from competition, and freedom at least for the large industrial and commercial consumers to choose their supplier from within the country or from abroad. This form of competition is the simplest to develop and monitor. On the other hand, the Bank should be cautious about recommending the creation of market structures that mandate total reliance on price bidding into a competitive power pool because this structure will only succeed in the presence of certain pre-conditions that are rarely in place, and the effort involved may divert attention from other reforms that are likely to produce bigger efficiency gains in the short to medium term (e.g., loss reduction in distribution).
- ***Small Countries and Countries with Limited Institutional Capacity:*** For small countries and those with limited institutional capacity, the focus would be first on commercialization of the sector and choosing a market structure appropriate for the country's circumstances. Private sector participation can be introduced gradually using management contracts or concession arrangements. Divestiture of assets can then be considered once the governance structure is fully implemented and the enabling environment for commercialization has taken place. For small countries, one or more fully or partially vertically integrated enterprises may be the best option if imports cannot create a sufficiently competitive market. For example, a partially integrated enterprise might combine existing distribution, transmission and generating assets with a requirement that all new supply sources be competitively acquired. This approach could also be combined with mandatory accounting unbundling so there is a potential to move to a more unbundled sector in the future. Horizontal unbundling into numerous generation and distribution entities is often impractical for these small markets.

7. ***Staff Training.*** Staff training will continue to emphasize lessons learned and the analytic tools needed to guide staff in specific country assessments. In addition, the Bank, IFC, and MIGA will continue to provide staff with information about the evolving power sector agenda through other channels, such as Energy and Mining Sector Board Discussion Papers, Viewpoints, Energy Sector Management Assistance Program publications, brown bag lunches, lectures, the annual Energy Week, and the Energy Help Desk.

8. ***Mainstreaming the Environment and Poverty Reduction.*** Management agrees with the recommendation that the WBG should mainstream environmental and poverty reduction objectives

into the energy portfolio, and has been taking steps in that direction following the approach set out in the Energy Business Renewal Strategy.¹ Environmental and poverty issues are being addressed in a broader context than power interventions, notably in other energy projects² as well as through coordination of energy sector agendas with education, health, and other social sector development projects. Such interventions can be an effective way to deliver benefits to the poor, particularly when affordability and access are priority issues. Management recognizes the need for ex-ante analysis of the impact on the poor of private provision of electricity services, particularly on affordability. Management also recognizes the need to stimulate innovative technologies for supplying electricity to poor areas in ways that meet the Bank's environmental safeguards economically. Impetus for continuing attention to environmental and poverty reduction objectives was provided by the World Summit on Sustainable Development in Johannesburg in September 2002³ as well as by the agenda of the February 2003 Energy Week and related Energy Workshops. Beyond these events, which served to raise the prominence of environmental and poverty reduction objectives, the WBG will continue to carry out country-specific analytic work. The results of this work will provide the basis for investments and reforms in support of further mainstreaming of environmental and poverty reduction objectives.

9. ***Private Investment in Distribution.*** As part of its recommendation to mainstream environmental and poverty reduction objectives, the OED/OEG/OEU review draws attention to the importance of reforming and facilitating private investments in the distribution subsector. Management concurs with this emphasis. The WBG has recognized the key role of private sector participation in the distribution subsector since the early 1990s, and has provided guidance to staff on this topic since the mid-1990s. This has proved to be the most challenging area for PSDE because of the high political and regulatory risks perceived by investors in developing country power sectors. Against this challenging background, the recent shift in the IFC portfolio in favor of distribution investments is an important change, especially if it can be sustained. Hence the WBG will help countries to exploit the full range of ways to involve the private sector in distribution, from long-term concessions and full ownership with major investment commitments to limited or effectively no financial risk exposure such as through contracting out of retail services, service contracts and management contracts that can improve subsector performance in situations where asset divestiture is not feasible. The particular form of private involvement should be selected pragmatically, depending largely on country and sector conditions and the stage of reform. Two recent publications by the Energy Sector Anchor provide guidance to staff in this respect. One is on the application of the World Bank's Partial Risk guarantee to distribution privatization. The other is on how best to mitigate risks through better specification of regulatory contracting mechanisms.

10. ***Innovations to Ensure that PSDE Goals are Appropriately Reflected in Operations.*** The OED/OEG/OEU review recommends that operational innovations be encouraged to help achieve greater consistency between World Bank Group practices (and instruments) and its PSDE goals. Management is committed to working toward this objective where the Country Assistance Strategy

¹ Executive Directors discussed this strategy informally in May 2001, following presentation of *The World Bank Group's Energy program: Poverty Alleviation, Sustainability and Selectivity, A Topical Briefing to the Board of Directors*, May 22, 2001.

² The current pipeline of energy projects shows a considerable shift toward projects with environmental components. (The Global Environmental Facility and the Prototype Carbon Fund are helping to promote these changes.)

³ The World Summit on Sustainable Development highlighted four energy issues: (a) increasing access by the poor to modern fuels; (b) improving the targeting of subsidies; (c) increasing the use of renewable energy resources; and (d) increasing the efficiency of energy use.

(CAS) sets out pursuit of PSDE goals as a priority. IFC and MIGA have become increasingly involved in preparing CASs, focusing on countries where transactions are developing or ongoing as the reform agenda has an important impact on their project risk assessments. IFC and MIGA's inputs also help shape priorities for improvements in the policy and institutional environment for private investments; and as the role of energy in poverty reduction evolves, they are expected to become increasingly involved in this agenda as well. However, to date, private investors have been reluctant to participate in low-income countries, as the perceived risks in these markets outweigh the expected returns. To increase PSDE in these markets, the Bank is working with IFC to ensure that these risks are appropriately allocated. They will also seek to widen the pool of investors to include strong domestic private partners in client countries so as to counter the decline in the number of European and American investors caused by developments in their home markets. Output-based aid (OBA) appears to be a promising technique to increase poor people's access to electricity and to reduce costs by facilitating private investment in these markets. It is important, however, that OBA not be undertaken in isolation: in some cases it could be a component of a sectorwide approach that encompasses achievement of transmission and generation capability and reliability commensurate with consumers' ability to pay.

11. **Measuring Impact.** As part of its recommendation to encourage innovation in the pursuit of PSDE objectives, the OED/OEG/OEU review highlights the importance of developing performance indicators and related internal systems. Management agrees that these are important objectives. Monitoring and evaluation (M&E) of PSDE should cover intermediate indicators of outputs and outcomes, and the WBG should help client governments and executing agencies to develop their limited financial resources and capacity for M&E programs. To make headway toward improved M&E, a comprehensive work program is under way, details of which are set out in the attached Management Action Record matrix.

IV. CONCLUSIONS

12. As noted, Management broadly supports the recommendations and conclusions of the OED/OEG/OEU review. Implementation of many of the recommendations is already under way, drawing on five key lessons from recent experience:

- **Continue to Support PSDE.** Experience has shown that the private sector has brought efficiency gains, performance improvements, and cost reductions when the incentives for investors, producers, consumers, and regulators were adequately addressed. Pursuit of greater engagement of the private sector in distribution, in particular, is important.
- **Need for Government Support of Broad-Based Reforms.** Reforms are key to increasing economic efficiency and will be supported by economic and sector work, policy advice, and adjustment operations. Monitoring and evaluation will be done in parallel to establish the empirical evidence to guide the World Bank Group's evolving agenda. An ambitious PSDE agenda should only be supported when there is clear and strong political commitment, including up-front actions to strengthen sector governance.
- **Innovation.** The WBG will continue to support innovative approaches, especially in addressing the Millennium Development Goals and the Johannesburg objectives that build on them.

- ***Competition as an Incentive Mechanism for Efficiency Gains.*** To establish incentives for the desired efficiency gains, the WBG will continue wherever feasible to support the establishment of an enabling environment for a competitive generation market.
- ***Governance.*** It is important to strengthen governance structures (including regulation, protection of investor rights, and implementation of internationally recognized accounting and auditing principles) before privatization. Privatization can help develop better governance arrangements by formalizing a separation of powers and arm's length regulation.

MANAGEMENT ACTION RECORD

Major OED Recommendation	Management Response
<p><i>1. On an urgent basis, the WBG should provide operational guidance to WBG staff on when and how to continue promoting PSDE under the current situation of heightened macroeconomic and political risks, and scant investor interest. Such guidance should be grounded on the Bank's recently enacted PSD strategy.</i></p> <ul style="list-style-type: none"> • The Bank's Energy and Mining Sector Board, in close consultation with the Private Sector Development Board, should provide WBG staff with updated and more practical operational guidance for pursuing PSDE based on what works best in terms of reform packages and their sequencing, given particular country-sector situations, needs, and institutional capacities. Best practice examples can be developed for a range of frequently observed country attributes. • The development of this guidance should be truly joint among the Bank, IFC, and MIGA, and it should define a framework to fully analyze PSDE alternatives that would ensure environmental sustainability and align with the WBG's poverty reduction mission. • WBG senior management should clarify the roles of the Bank, IFC, and MIGA in promoting PSDE, particularly in terms of increased financial and advisory support. 	<p>Management agrees, in general, with this recommendation. The Energy Sector Anchor has started the preparation of a Guidance Note to complement the many other learning mechanisms already in place. The Guidance Note, planned for delivery in early FY04, will address the respective roles of the Bank, IFC, and MIGA. The Note will focus on the urgent issues associated with arresting the decline in PSDE and protecting public goods through improved governance. However, as no "cookbook" solution exists for power sector reform, the WBG feels the appropriate approach to training energy staff will continue to be one which focuses on lessons learned and the analytic tools needed to guide staff in specific country assessments.</p>
<p><i>2. In its future PSDE interventions, the WBG should give greater emphasis to the mainstreaming of poverty reduction and environmental objectives (in addition to its traditional macro-fiscal and sector efficiency objectives), which are at the core of the WBG's overall energy strategy.</i></p> <ul style="list-style-type: none"> • The WBG should focus more on reforming and facilitating private investments in the distribution subsector, which will require actions to improve cash collections, reduce losses, address corruption, achieve better targeting of subsidies, expand access by the rural poor, and privatize distribution where 	<p>Management agrees with the recommendation that poverty reduction and environmental objectives be mainstreamed into the energy portfolio. A review of the current pipeline of energy projects reveals a considerable proportion of energy projects with environmental and poverty components. Environmental and poverty reduction objectives are being highlighted at learning fora, such as the February 2003 Energy Week and Energy Workshops. This will be followed by selected country-specific ESW addressing environmental and poverty concerns, as a precursor to inclusion of projects with corresponding objectives in the portfolio.</p>

Major OED Recommendation	Management Response
<p>and when circumstances permit.</p> <ul style="list-style-type: none"> • The WBG should maximize the involvement of the local private sector in small-scale and/or decentralized projects, which will require innovative approaches and much better cross-sectoral integration within the Bank, and among the Bank, IFC, and MIGA. 	<p>Regarding facilitating private sector investments in distribution, the WBG has already taken on this agenda through policy dialogue, support of private interventions, and facilitation of new instruments. For countries in which PSDE is planned, poverty alleviation and environmental protection will remain as key elements of the reform program including targeted income support for the poor in cases where it is economically efficient and lifeline energy tariffs when it is not. The Energy Anchor will prepare a paper in FY04 that addresses these issues of environmental sustainability and poverty reduction.</p> <p>The prospects for increasing local private sector involvement in small-scale and/or decentralized projects are modest as the limited financial resources available tend to be allocated to other high-risk/high-return investments. However, the WBG plans to encourage participation from a broader group of private investors, including those from low- and middle-income countries.</p>
<p><i>3. The WBG should encourage operational innovations to ensure greater consistency between its practices and instruments, and its PSDE goals as they evolve.</i></p> <ul style="list-style-type: none"> • The WBG needs to improve the coordination of the various units active in PSDE. To this end, it should pursue better integration of its PSDE objectives within the CAS framework (including in non-joint CASs) and Poverty Reduction Strategy Papers (PRSPs). • The Bank, IFC, and MIGA management should support initiative and flexibility in PSDE operations and AAA, in order to better respond to rapidly changing country-sector conditions and opportunities that are not always foreseeable in the CAS. Through its diverse lending and advisory instruments, the WBG should promote more public-private partnerships and promising innovations, such as pro-poor design of reforms and output-based aid schemes, for which robust monitoring and evaluation systems are essential. • The WBG should develop performance indicators and related internal systems, as well as help in strengthening borrower 	<p>Management agrees that, within the framework provided by the CAS, it should continue to increase consistency of PSDE goals with the Bank's operational practices and instruments. Consistency is pursued, notably, when the Bank and IFC prepare joint CASs (half of CASs and CAS progress reports in FY01 and FY02 were prepared jointly, and this effort is being sustained in FY03, when 15 CASs and CAS progress reports are expected to be joint Bank/IFC products, including those for China, Colombia, Jordan, Thailand, and Vietnam). IFC and MIGA will continue to be involved in CASs, focusing especially on those countries where transactions are developing or ongoing because the reform agenda has an important impact on their project risks. Where the CAS indicates that support for PSDE goals is a priority, the Bank will work with IFC to attempt to ring-fence risks and ensure that they are appropriately allocated.</p> <p>Work is under way in the PSI VPU and the energy sector family/Sector Board to establish appropriate methodologies and acquire data for monitoring and evaluation. The Energy Business Renewal Strategy set forth proposed indicators to measure performance in the sector as a whole. A</p>

Major OED Recommendation	Management Response
<p>capacities (including through project funding) to monitor and evaluate the achievements and impacts of its PSDE interventions. These M&E efforts should be keyed to the Energy Business Renewal Strategy and other relevant strategy and policy objectives, especially in the relatively neglected areas of helping the poor and mainstreaming environmental sustainability.</p>	<p>note on energy indicators will be prepared in FY04 for the Results Measurement System in IDA14. In parallel, work is being launched at the PSIVP level to develop performance measures and accompanying databases for several key infrastructure sectors, including energy, which can serve a variety of institutional purposes (e.g., to standardize and set benchmarks for use in Bank ESW). The work is likely to focus initially on sectors and indicators that have higher priority for the tracking of global outcomes (e.g., those sectors and targets that are identified in the Millennium Development Goals). Critical lessons on data sources and needs (for the Bank, donors, and clients) will be gleaned from this exercise, as well as lessons on borrower capacity, sustainability of data collection and partnering with specialized agencies in the various sectors. Finally, PSIVP has recently completed an assessment of project-level M&E, focusing on overall quality, distilling sector-specific lessons of best practice on outcomes and indicators, and clarifying links between project-sector-country-global outcomes and indicators to measure progress toward those outcomes. These efforts represent a solid beginning to address deficiencies in the ability of the Bank, clients, and the international community to measure performance across all infrastructure sectors.</p>

Annex 19. Chairman's Summary: Committee on Development Effectiveness (CODE)

1. On May 7, 2003, the Committee discussed *Private Sector Development in the Electric Power Sector: A Joint OED/OEG/OEU Review of the World Bank Group's Assistance in the 1990s* ((R2003-0038, IFC/R2003-0043, MIGA/R2003-0011) and the *Draft Management Response* (CODE2003-0022). The Committee thanked the evaluation units of the Bank Group and Management for their comments and was pleased at the high degree of coherence between the recommendations in the review and the evolution of Management's orientation to the power sector.

2. **Background.** This joint OED/OEG/OEU review evaluates the performance of the World Bank Group during the 1990s in promoting private sector development in the electric power sector (PSDE). The review's main message is that PSDE has delivered expected benefits and good outcomes where countries were committed, reforms have advanced, and PSDE programs were properly implemented. However, the quality of outcomes depended on the objectives pursued and on the types of assistance provided. Most countries remain in the early stages of reforming and deepening private sector involvement in their power sectors. Bank supported activities achieved good results where country ownership and sustained political commitment existed. But the Bank underestimated the complexity and time required for reforms to mature and achieve lasting and equitable country-sector outcomes; it obtained poor or, at best, mixed results where reforms have been weak or slow to take root. IFC and MIGA- focusing on the single reform objective of private sector participation and responding to market demand- achieved good project-level outcomes overall, although these could not in and of themselves ensure good sector-level outcomes. The review further points out that private interest in the power sector has been declining rapidly in recent years, particularly since the 1997 Asian financial crisis. Thus, the global picture indicates that while the Bank pursues the creation of a PSDE enabling environment in 68 countries, private foreign interest itself is dwindling. The review, therefore, suggests that the Bank work towards the middle of the "continuum" from fully public to fully private service provision, and ensure that resources for investment in power generation and, particularly, transmission, are available.

3. Specifically, the review recommends that the WBG continue to pursue PSDE. In doing so, it should (i) provide operational guidance to staff on when and how to continue promoting PSDE; (ii) give greater emphasis to the mainstreaming of poverty reduction and environmental objectives in the design of future PSDE strategies; and (iii) encourage operational innovations (e.g. in public-private partnerships) coupled with more systematic monitoring and evaluation of impacts.

4. Management welcomed the review and noted its timeliness given that ten years had passed since the Bank adopted its policy on PSDE, and that it was in the process of preparing a forward looking action plan on the Bank's engagement in the infrastructure sector. Management broadly agreed with the findings of the review and agreed that the Bank needed to operate away from the extremes of only public or private financing of infrastructure and find innovative solutions. Management summarized its response to the review's recommendations in which it noted, in particular, the development of a PSDE guidance note to staff addressing the respective roles of the Bank, IFC, and MIGA in PSDE; progress on mainstreaming poverty reduction and environmental objectives in PSDE through an increasing pipeline of energy projects with environmental components, multisectoral approaches and improved coordination, and greater attention to poverty reduction and environmental objectives through fora such as the WSSD Summit in Johannesburg and the 2003 Energy Week; and ongoing work to improve monitoring and evaluation through a comprehensive program to develop concrete indicators.

5. **Main Conclusions and Next Steps.** The Committee broadly endorsed the findings of the review and focused on the lessons learned for the future. The main conclusions of the discussion included support for a continued role by the Bank Group in promoting PSDE; concern about declining private sector investment; and, emphasis on the need for the Bank Group to address the issue by working across the continuum away from the extremes of purely public or private sector engagement. Members underlined the importance of providing clear guidance to staff, the importance of integrating environment and poverty reduction into the Bank Group's approach, and the importance of developing a sustainable approach to affordability of electric power to the poor. It was agreed that further discussion would take place at the upcoming Board discussion of the infrastructure action plan and that Management would hold a Technical Briefing to consult with the Board on the PSDE guidance note to staff. The final version of the review along with the finalized management response and a summary of the CODE meeting will be made available to the public in accordance with procedure.

Among the specific issues raised by the Committee were:

6. **Approach and Instruments.** The Committee commented on the differences between the Bank's sector-level outcomes versus the project-level outcomes of IFC and MIGA. Some members suggested that the Bank's approach to PSDE was not sufficiently tailored to individual country needs and there was a need for many more flexible instruments to quickly respond to on-the-ground needs. In this regard, they suggested that a much more thorough evaluation was needed of the Bank's policy advice given that the review had found that nearly half of the Bank's interventions had failed to produce the desired sector-level outcomes. Management agreed on the need to maintain a flexible approach and noted that it was focusing on appropriate reform strategies to account for individual country situations and on providing a menu of options for this purpose.

7. **Public-Private Roles.** The Committee expressed concern about the withdrawal of private capital from the sector and stressed the need for better analysis of the reasons and much greater detail on how the Bank Group proposes to respond. The importance of innovation, as mentioned in the review, was highlighted in this regard. Some members suggested that the Bank Group had been overly reliant on the private sector and it was necessary to find a balance between supporting private and public sector financing of infrastructure projects. Others suggested that the performance of public utilities had been extremely poor and there were significant efficiency gains from private sector involvement. Some members stressed that while the review and the Management Response assumed that it was feasible to reengage the private sector in developing country markets, Management needed to have an alternative for client countries since it was not likely that the private sector would meet the global need for investment in generation and distribution. One member felt that an important area of inquiry was whether power sector reforms and IPPs supported by the Bank Group had contributed to lowering the cost of electricity generation and improving the access of the poor to electricity. He emphasized the critical importance of policy advice and building capacity in developing countries to negotiate appropriate and fair contractual arrangements between the government and the private sector. The Committee agreed that the Bank needed to remain flexible, and assess how the public and private sectors could bring their relative strengths to bear in each country situation. Management responded that the declining interest of the private sector was a cause for concern. Reasons included significant difficulties in global economic markets in the 1990s, over-optimism on the potential role and interest of the private sector, and a slower-than-expected pace of reform in client countries. Management agreed with the need for flexibility and emphasized that the Bank's approach would be tailored to the particular economic, technical, political, and social conditions of each country. For example, in the case of relatively large and advanced countries, the focus will be on unbundling the sector, privatization of viable entities and initiation of competitive

transactions, whereas for smaller countries with limited institutional capacity, the focus will first be on commercialization of the sector and choosing a market structure appropriate for the country's circumstances.

8. **Integrating Poverty Reduction and the Environment.** The Committee emphasized the importance of the Bank Group mainstreaming poverty reduction and the environment in its PSDE work and asked Management how they proposed to address this issue. Some members highlighted the inherently pro-poor focus of power sector reform noting that access to power supply is critical for providing the poor with a better quality of life and for supporting social sector interventions in the health and education sectors. One member, while stressing that the poverty reduction goal was fundamental, suggested that other goals such as meeting environmental objectives could lead to too many project delays. Another member noted that the review and Management Response urged the return of the private sector to PSDE and wondered what the Bank Group proposed to do in cases where there was a trade-off between attracting private investment and the raising of environmental safeguards standards.

9. **Subsidies.** The Committee stressed the importance of developing a sustainable approach to targeted subsidies for the poor taking account of fiscal pressures and the need to make power affordable to the poor. Members stressed the importance of innovative use of subsidies, guarantees, and the domestic private sector to respond to individual country situations. OED emphasized that while subsidies did work, they had to be transparent and targeted appropriately to ensure that they were in fact getting to the poor. Management agreed and stressed that the Bank's current focus was to target subsidies appropriately. It emphasized that it was focusing on affordability for the poor as well as efficiency in going forward.

10. **Monitoring and Evaluation.** The Committee agreed with the review's findings with regard to the need for more systematic monitoring and evaluation of impacts. Members stressed the importance of intermediate quantifiable indicators that would allow for mid-course correction whilst emphasizing the need for the Bank to be flexible and responsive to changing needs in the sector. Management agreed and pointed to ongoing work in this area that would address the difficulty of measuring the impact of PSDE and the limited financial resources and capacity of client governments and executing agencies for monitoring and evaluation.

11. **Division of Labor.** The Committee discussed coordination within the Bank Group and stressed the importance of a clear division of labor between the PSD and Infrastructure VPUs to facilitate greater coherence in the Bank Group's strategy in PSDE. They hoped the separation of the two VPUs would achieve this and encouraged strong coordination between them. They stressed the importance of the new CAS framework and the results agenda to further address this problem. Management agreed.

Finn Jonck, Chairman

