ENERGY SECTOR MANAGEMENT ASSISTANCE PROGRAM

E N E R G Y

CY2007–FY2008 ANNUAL REPORT

ESMAP

Energy Sector Management Assistance Program (ESMAP)
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ESMAP's mission is to assist clients from low-income, emerging, and transition economies to secure energy requirements for equitable economic growth and poverty reduction in an environmentally sustainable way. ESMAP is managed by the Energy, Transport and Water Department (ETW) of the World Bank Group and is governed by a consultative group of donors that meets annually.

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Foreword

Foreword

The hallmark of the Energy Sector Management Assistance Program, or ESMAP, is the promotion and support of innovation and forward thinking in the energy sector. In these times, finding new solutions to energy challenges has become even more important. In 2008, oil prices rose to over US$150 a barrel before declining again in anticipation of a global recession. Global climate change has taken center stage on the international agenda, and serious actions are needed to address it. Hundreds of millions of people still do not have access to modern energy services, depriving many of tools they need to work their way out of poverty.

ESMAP's importance in addressing these issues was recognized during the World Bank Group Sustainable Development Week 2008, at which ESMAP celebrated its twenty-fifth anniversary with the participation of speakers and staff past and present. With standing-room-only sessions on high oil prices, energy security, renewable energy, energy efficiency, biomass energy, and other energy-related topics, the event's programs highlighted both the problems faced by the energy sector and ESMAP's many contributions over the past years to analyzing and resolving them.

ESMAP's policy and analytical strength were further demonstrated through a number of major policy studies completed in 2008. For example, a major new study on promoting energy efficiency was supported in part by ESMAP. *Financing Energy Efficiency: Lessons from Brazil, China, India, and Beyond* stressed that energy efficiency projects can partly meet new energy demands more cheaply than can development of new supplies, but it also noted that undertaking such work requires addressing the weak economic institutions in developing and transitional economies. Another book completed in 2008 was *The Challenge of Rural Electrification: Strategies for Developing Countries*. Through a review of successful programs in 10 countries, the study concluded that major opportunities exist for increasing the pace and widening the scope of rural electrification in developing countries, which will in turn enable large numbers of new consumers to enjoy the benefits of electricity. A related study underscored the enduring impact of ESMAP's work; this critical review of the methods used by the World Bank Group Internal Evaluation Group (IEG) to value the benefits of rural electrification confirmed the continued validity of a 2002 ESMAP study, leading to a workshop on this topic held jointly by ESMAP and IEG in 2008.

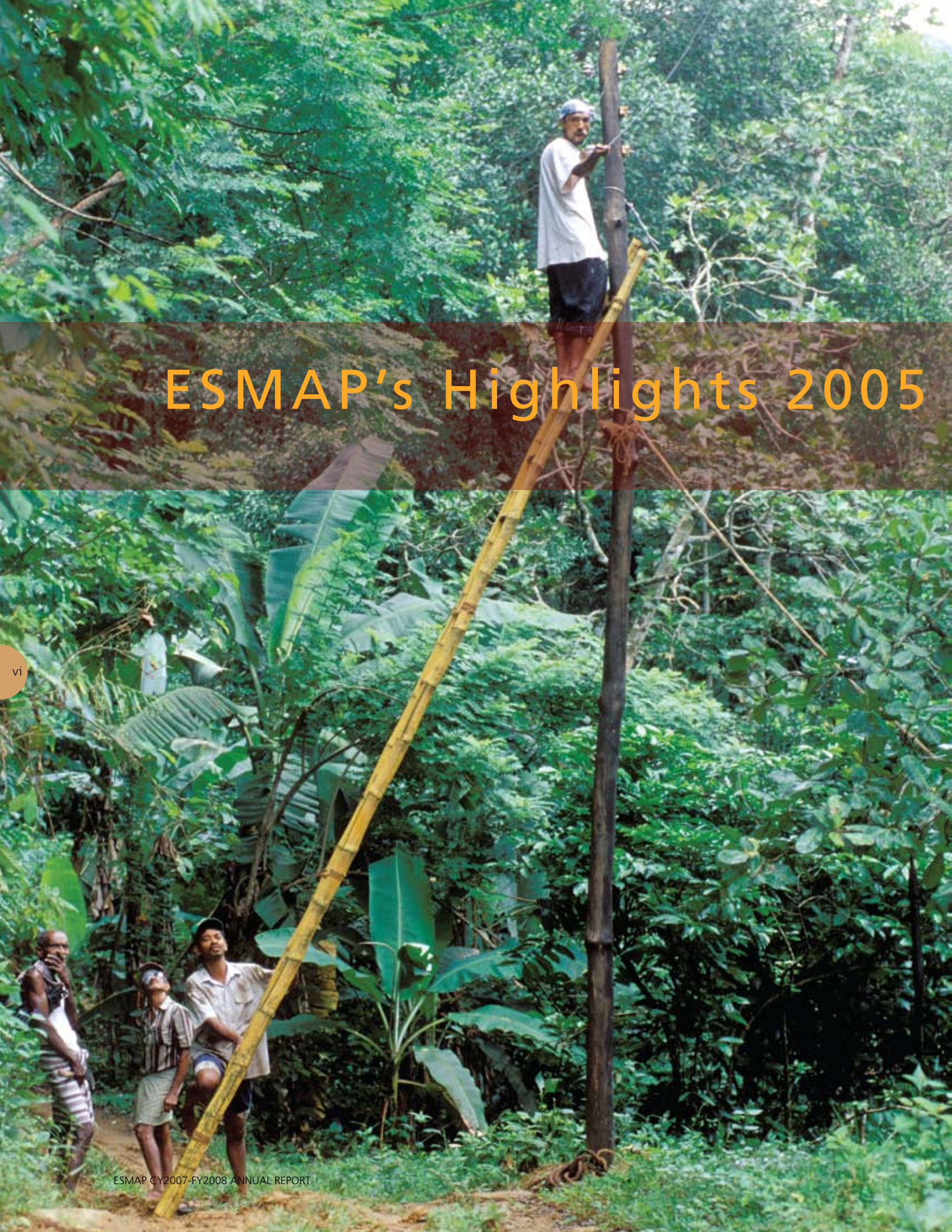
During the last year, ESMAP also contributed to a forward-looking view of the role of renewable energy and energy technology in facing energy challenges. Renewable energy policies and programs have been strengthened during the last few years, and there is no doubt that during the coming years, the role of new energy technologies will be at the forefront of efforts to address a wide variety of energy problems.

ESMAP today is well placed to deal with these issues, in part because of its own renewal. With its twenty-fifth anniversary celebration now completed, and with the close of its 2005–2007 Business Plan, ESMAP has evolved from a central program to one now well integrated into the World Bank Group regional energy operations. This means that the innovative policy work that has been ESMAP's traditional strength is now more closely related to actual operations on the ground. This has resulted in better communications and more effective coordination among the energy units of the World Bank Group. To support this work, ESMAP has committed itself to more effective communication of results by developing a line of high-quality publications and by making more use of electronic communications. The future also holds the promise of ongoing development and improvement of global outreach and international partnerships.

ESMAP clearly has been very dynamic in 2007 and early 2008, and it is in the process of developing a new business plan for 2008 through 2013 that will lead the program into the future. This plan will feature some key realignments based on the dramatic recent changes in energy-sector realities faced by both developed and developing countries, with a focus on energy as it relates to poverty and climate change. In support of these goals, ESMAP will continue its role in such fields as energy efficiency, governance, renewables, regional trade, and others. As it has throughout its history down to FY2008, ESMAP stands ready to address the energy challenges that have been so clearly manifested in recent years and that will be with us for many years to come.

Jamal Saghir
Director, Energy, Transport and Water
Chair, Energy and Mining Sector Board

Amarquaye Armar
Program Manager
Energy Sector Management Assistance Program



ESMAP's Highlights 2005

ESMAP's Highlights 2005-2007

Regional Block Grants to Support Energy Operations. ESMAP moved from a centralized to a more decentralized program in which regional energy operators set their own priorities for ESMAP funding while remaining consistent with priority areas. This improved the relevance of projects for regional energy operations.

Initiation of Lighting Africa. Rural areas in Africa have very low rates of electrification. In May 2008, under Lighting Africa, the Development Marketplace competition selected winners, each of whom will receive grant funding to implement projects that offer affordable, clean, and safe off-grid lighting and that promise to improve access to lighting for people living without electricity in countries such as Burkina Faso, Cameroon, Ghana, Kenya, Liberia, Namibia, Nigeria, Rwanda, and Tanzania.

–2007

ESMAP as a Global Center of Excellence. During 2005–2007, ESMAP expanded its number of staff to be able to produce high-quality global studies and to provide support to regional operations in selected areas of specialty, such as energy poverty, renewable energy, energy efficiency, and market reform and governance.

Communications, Publications, and Outreach. ESMAP changed its publication policies and added new staff to update its communications strategy. Today ESMAP has a more highly developed electronic outreach program and supports a wide range of publications.

Celebration of ESMAP's 25th Anniversary. ESMAP was chosen to lead the energy events at SDN Week 2008. During the event, ESMAP held a twenty-fifth anniversary celebration that drew hundreds of participants, including current and former staff.

GAP Fund and the Global Village Energy Partnership (GVEP). ESMAP for the first time worked with nongovernmental organizations (NGOs) and the private sector to provide small grants for energy innovations with impact on poor. This program involved 20 grants for organizations in 12 countries for projects ranging from microhydro systems to improved biomass stoves.

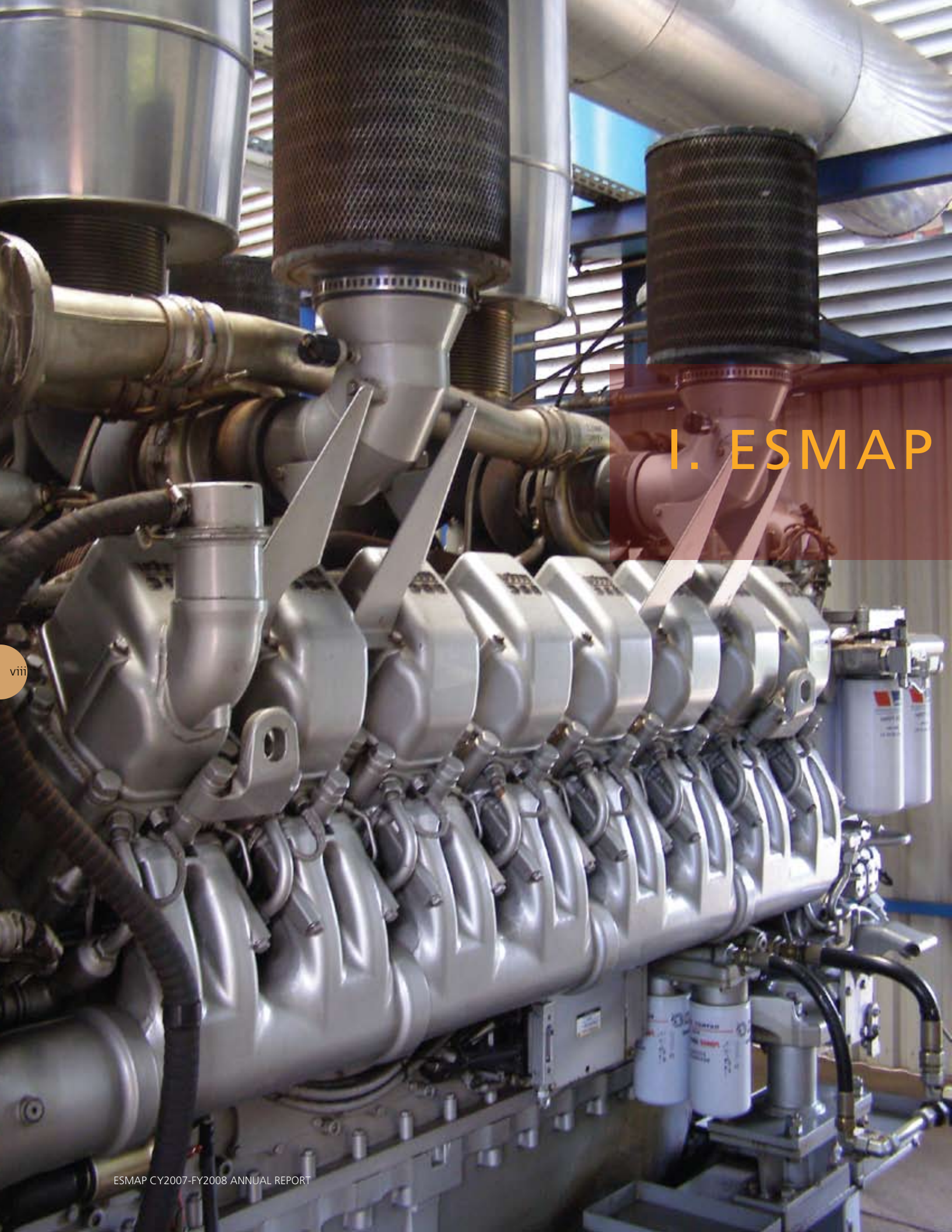
Energy Small- and Medium-Sized Enterprise Program. ESMAP dedicated its resources to support small and medium enterprise development in developing countries for organizations that would provide energy services in areas considered unattractive to large service providers. The ESMAP Energy SME initiative supported 13 projects in 12 countries and 1 regional program in Africa.

Clean Energy Investment Framework[1] and Renewable Energy. Consistent with the World Bank Group's commitments from the 2004 Bonn International Conference on Renewable Energy, ESMAP has expanded its commitment to renewable energy through support of the World Bank Group Clean Energy Investment Framework and other relevant regional energy projects.

Improving Energy Policies for Developing Countries. ESMAP has committed itself to promoting forward-looking analytical work and has published a wide variety of high-quality books and reports on key topics involving energy policies in developing countries. Examples include:

- *People and Power: Electricity Sector Reforms and the Poor in Europe and Central Asia* (2007)
- *The Challenge of Rural Electrification: Strategies for Developing Countries* (2007)
- *Accelerating Clean Energy Technology Research, Development, and Deployment: Lessons from Non-energy Sectors* (2008)
- *Financing Energy Efficiency: Lessons from Brazil, China, India, and Beyond* (2008)
- *The Urban Household Energy Transition: Social and Environmental Impacts in the Developing World* (2005)
- *Sustainable Energy in China: The Closing Window of Opportunity* (2007)

[1]. In 2007, the CEIF initiative was superseded by the Strategic Framework for Climate Change and Development (which has recently been renamed: Development and Climate Change: A Strategic Framework for the World Bank Group).



I. ESMAP

ESMAP at a Glance

The Energy Sector Management Assistance Program (ESMAP), established in 1983, is a global, multidonor technical assistance program aimed at promoting environmentally sustainable energy solutions for poverty reduction and economic growth. ESMAP recognizes that access to affordable, reliable, and sustainable energy services is indispensable in achieving the Millennium Development Goals (MDGs).

The core objective of current and prior business plans is to promote and secure access to energy for poverty reduction and economic growth. The linkages that have formed ESMAP strategy since its inception—energy and poverty, environmentally sustainable development, private-sector participation, and market efficiency—remain highly relevant. The current business plan, however, adds new activities focused on energy security and the social dimension of each thematic area, especially the lowest income groups and the gender dimension.

at a Glance

ESMAP provides policy advice and helps build consensus on environmentally sustainable energy development in developing countries and economies in transition. ESMAP also undertakes cutting-edge analytical work on sector issues, contributes to the transfer of knowledge among stakeholders and practitioners, and pioneers implementation and financing mechanisms for delivering environmentally sustainable energy services.

ESMAP Mission Statement and Governance

ESMAP's mission is to assist clients from low-income, emerging, and transition economies to secure energy requirements for equitable economic growth and poverty reduction in an environmentally sustainable way. ESMAP is managed by the Energy, Transport and Water Department (ETWD) of the World Bank Group and is governed by a consultative group of donors that meets annually.

How ESMAP Pursues Its Mission

ESMAP pursues its mission based on a business plan updated every three years. The current ESMAP Business Plan 2005–2007, which covers this annual report, has four major thematic areas:

- Energy security, including energy efficiency
- Renewable energy
- Energy poverty
- Market efficiency and governance

ESMAP's mandate and products have evolved over time to meet the changing needs of its clients. ESMAP has operated in more than 100 countries through more than 800 activities since its inception, and it continues to evolve in response to changing conditions and client needs.

Starting in 2005, ESMAP operations underwent a major transformation as activity implementation was partially devolved to the World Bank Group's regional operational organizations. ESMAP continues to directly manage global activities, including legacy activities, research on new ideas and concepts, and cross-cutting efforts, such as advanced analytical work, knowledge dissemination, and leveraging of operational activities.

How ESMAP Delivers Services

ESMAP-financed activities are led by World Bank Group staff in partnership with international, national, regional, and/or local organizations. International and local consultants are extensively used. Related procurement is governed by World Bank guidelines. More information about procurement arrangements and consultancy opportunities is available on the ESMAP Web site: http://www.esmap.org.

II. ESMAP's
(January 2007–June 2008)

Portfolio in Brief

ESMAP's Portfolio in Brief

This annual report actually covers an 18-month period, as ESMAP is shifting its reporting period to align with the fiscal year periods currently in use by the World Bank Group. As part of its effort to clean up its portfolio in preparation for the ESMAP 2008–2013 Business Plan, ESMAP closed all completed legacy activities. For this reporting period, this includes even those activities with pending publications.[2] ESMAP also closed nonperforming or slow moving activities that have failed to meet agreed-on benchmarks.

As might be expected, a consequence of closing completed or nonperforming activities and of considering closed some projects with pending publications has been the reduction of ESMAP's portfolio. There were 108 activities (worth US$23.5 million) in the ESMAP portfolio as of the end of June 2008, compared with 208 activities (worth US$40.2 million) as of December 31, 2006.[3] Likewise, the number of closed activities far exceeded the number of new activities initiated during the review period.[4] ESMAP initiated 74 new activities during the 18-month review period. Total new funding was US$11.4 million, which supported both new and ongoing activities. By contrast, ESMAP closed 154 activities worth (worth US$25.9 million) during the review period.[5] An additional 20 activities (worth US$2.1 million) were "dropped" as of June 30, 2008. Table 2.1 summarizes the evolution of ESMAP's portfolio through June 30, 2008, while Figure 2.1 illustrates the historic trend of ESMAP activities.

The following are the factors influencing the evolution of the ESMAP portfolio during the review period:

Clean Up of the ESMAP Portfolio. Removing long-completed legacy activities with only publications pending and terminating some slow-moving and nonperforming activities has helped ESMAP to provide a more accurate description of its portfolio. This was necessary to prepare for the new 2008–2013 ESMAP Business Plan. The cleaned-up portfolio constitutes a new starting point that will serve as the baseline for the new business plan and will enable ESMAP to track future trends more effectively.

Annual Block Grants. ESMAP continued to use annual block grants (ABGs) to contract with the World Bank Group's seven energy teams.[6] ESMAP allocated US$7.1 million in ABGs to the energy teams for FY2008, marginally up from US$6.9 million in FY2007. To support the implementation of the Africa Energy Access Scale-up Action Plan, Africa received the highest ABG allocations in FY2008. The

[2]. This is a departure from past ESMAP practice of only closing activities following completion of the publications process. ESMAP will now use separate funds for finalizing publications resulting from its activities.
[3]. To align the ESMAP 2008–2013 Business Plan cycle with the World Bank Group July 1 to June 30 fiscal year, the six-month period between January 1, 2007, and June 30, 2007, was annexed to the 2005–2007 Business Plan. As a result, the portfolio review in this Annual Report covers the period from January 2007 to June 2008.
[4]. The decline in the portfolio also partially reflects the addition of six months to the review period (i.e., January 2007 to June 2008), during which no new activities were added to the ESMAP portfolio.
[5]. Of these, 84 activities (worth US$17.8 million) were closed following the completion of the publication process. The publications of the remaining activities will be completed using separate funds.
[6]. Six regional energy teams plus the Oil, Gas and Mining Policy Division (COCPO) team.

Table 2.1: The Evolution of ESMAP Portfolio from January 1, 2007 to June 30, 2008

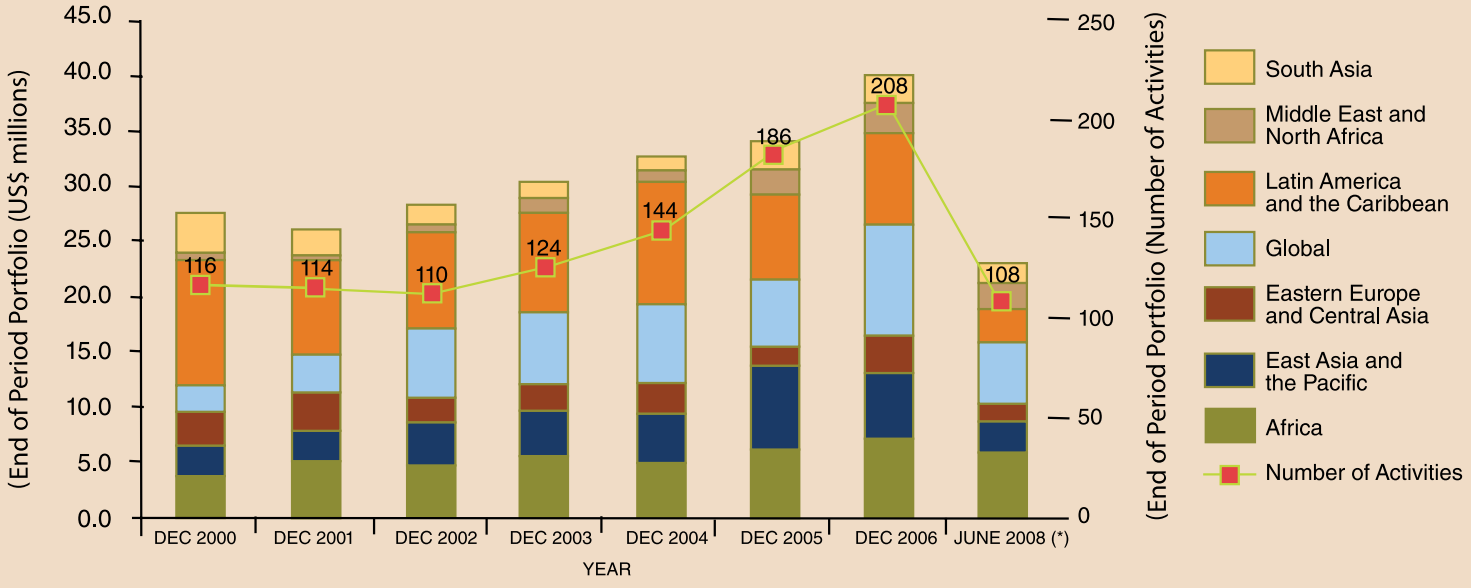
Status and Movements	Number	Value (US$ million)
Active portfolio as of January 1, 2007	208	40.2
Activities completed with publications in process	37	9.1
Portfolio under implementation as of January 1, 2007	171	31.1
Total new during January 1, 2007 to June 30, 2008	75	11.4
FY2008 activities	55	11.6
Changes in previous RBGs	19	(0.2)
Activities closed during January 1, 2007 to June 2008	(174)	(28.0)
Completed activities	(154)	(25.9)
Dropped/clawed back	(20)	(2.1)
Active portfolio as of June 30, 2008	108	23.5

Source: ESMAP activity database and annual block grant agreements, June 2008.

Middle East and North Africa, and Latin America and the Caribbean, and Europe and Central Asia were the other regions to receive high allocations (Table 2.2). From a thematic standpoint, Energy Security (which includes energy efficiency) was allocated the largest share of AGBs, accounting for 38 percent of total FY2008 ABG allocations, followed by Energy Poverty (28 percent), Renewable Energy (23 percent), and Market Efficiency and Governance (11 percent) (Figure 2.2).

Energy SME Program and G+5 Low-Carbon Country Case Studies. ESMAP allocations for some global programs, such as the Energy SME program supported by the U.K. Department for International Development (DFID) and G+5 low-carbon country case studies, are not included in the ABG statistics. During the review period, ESMAP allocated an additional US$0.8 million to the Energy SME program. The SME program now comprises support totaling US$4.9 million. Similarly, ESMAP allocated an additional US$1.0 million for the low-carbon case studies being undertaken in G+5 countries.

Figure 2.1: Snapshots of the ESMAP Portfolio, 2000–2008



Source: ESMAP activity database and annual block grant agreements, June 2008.

** Reflects the results of the portfolio-cleaning exercise undertaken in preparation for the ESMAP 2008–2013 Business Plan.*

Table 2.2: FY2008 Annual Block Grant Allocations[7]

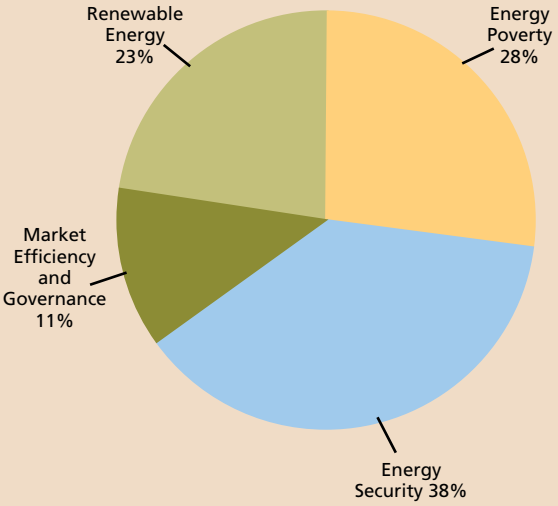
Region	Activities	Value (US$ million)
Africa (AFR)	12	2.05
Middle East and North Africa (MNA)	9	1.44
Latin American and the Caribbean (LCR)	10	0.93
South Asia	12	0.81
Oil, Gas and Mining Policy Division (COCPO)	5	0.56
East Asia and the Pacific	6	0.40
Europe and Central Asia (ECA)	6	0.90
Total	60	7.09

Source: ESMAP activity database and annual block grant agreements, June 2008.

[7]. Approximately half of the activities funded under FY2008 ABG are ongoing activities started in previous fiscal years.

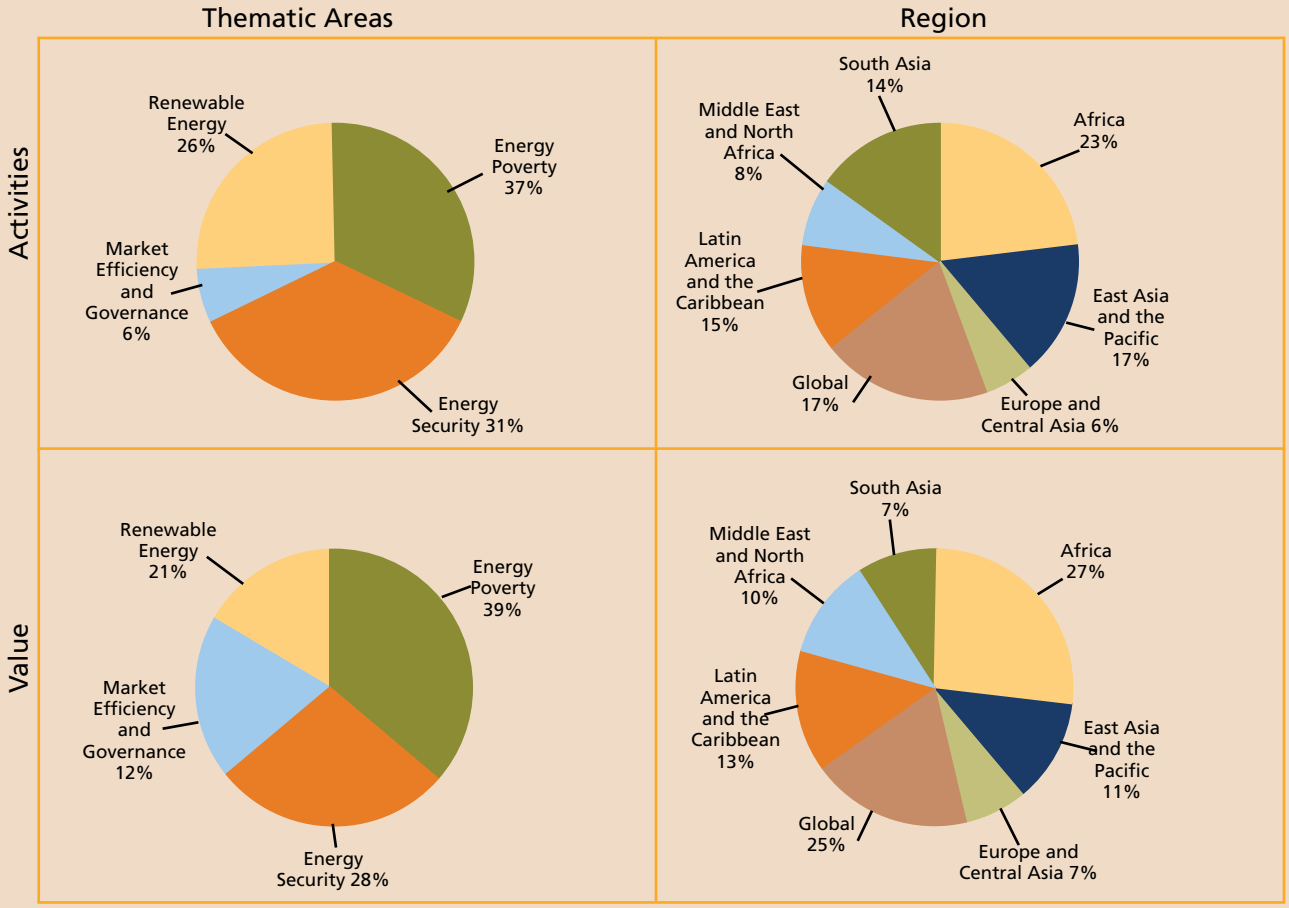
ESMAP Portfolio Value Allocations by Thematic Area and Region. For the overall ESMAP portfolio, the value of financing allocated to thematic areas was fairly stable, with only very small changes. Energy Poverty continued to be the largest thematic area in terms of project financing, accounting for 47 percent of the value of the ESMAP portfolio (Figure 2.3). Energy Security (including energy efficiency) and Renewable Energy gained in importance in the portfolio, increasing in proportion, respectively, from 23 percent and 12 percent of the value of ESMAP portfolio as of end-December 2006 to 25 percent and 17 percent as of end-June 2008. By contrast, the share of Market Efficiency and Governance declined from 13 percent to 11 percent during the same period. From a regional standpoint, Africa had the largest share (23 percent) by value in the ESMAP portfolio, followed by Global (22 percent), Latin America and the Caribbean (18 percent), East Asia and the Pacific (15 percent), the Middle East and North Africa (10 percent), South Asia (8 percent), and Europe and Central Asia (6 percent).

Figure 2.2: FY2008 Annual Block Grant Allocations by Thematic Area



Source: ESMAP activity database and annual block grants, June 2008.

Figure 2.3: ESMAP Portfolio by Thematic Area and Region



Source: ESMAP activity database and annual block grants, June 2008.

III. ESMAP's
(January 2007–June 2008)

The four ESMAP thematic areas reflect very important concepts in energy development. They include market efficiency and governance, energy poverty, and energy security, including energy efficiency and renewable energy. These priority activity areas derive from the 2005–2007 Business Plan. The activities reported in this chapter include the ESMAP portfolio for January 2007 through June 2008 to reflect the new reporting period.

Energy Security

The provision of affordable, reliable energy supplies is a necessary precursor to economic development and a key ingredient in alleviating poverty for the world's poor. Over the years, ESMAP has been at the forefront of efforts to help poor countries design both short-term and long-term policies that encourage economic resiliency and safeguard livelihoods, especially for the poor, against energy supply dislocations, unreliable supply of electricity and other energy sources, and high and volatile fossil-fuel prices. As spectacular rises in fossil-fuel prices in recent years have undermined economic growth, energy security issues have become increasingly important. This is especially true when high prices harm the countries' poorest citizens because their fuel expenditures often constitute substantial shares of their income. Energy efficiency issues are considered a subtheme within energy security.

Portfolio

Table 3.1: Key Energy Security Activities, January 2007–June 2008

Think Tank

- *Accelerating Clean Energy Technology Research, Development and Deployment* (Flagship report, World Bank Working Paper No. 138. This ESMAP report was published by the World Bank Office of the Publisher (EXTOP) under the World Bank Working Paper series (ISBN 978-0-8213-7481-8).
- *Sustainable Energy in China: The Closing Window of Opportunity*. (Flagship report published jointly by ESMAP and DRC under EXTOP's Directions in Development Series, 2007. (ISBN-10: 0-8213-6753-6).
- *Coping with Oil Price Volatility* (ESMAP Special Report 005/08).
- *The Impact of Higher Oil Prices on Low-Income Countries and on the Poor* (ESMAP Formal Report 299/05).
- *The Vulnerability of African Countries to Oil Price Shocks: Major Factors and Policy Options* (ESMAP Formal Report 308/05).
- Best Practices in Mainstreaming Environmental Safeguards into Gas Pipeline Activities.
- *The Reform of the Hydrocarbon Sector in Paraguay* (ESMAP Technical Report 122/08, Spanish only).
- The East Asia Regional Energy activity (Flagship report produced and disseminated by the Region).
- *Strategy for Coal Bed Methane (CBM) and Coal Mine Methane (CMM) Development and Utilization in China* (ESMAP Formal Report 326/07).
- *Turkey's Experience with Greenfield Gas Distribution since 2003* (ESMAP Formal Report 325/07).

Knowledge Clearinghouse

- The Roundtable on Energy Security enabled the World Bank Group to assemble a group of 12 world experts to discuss in a "Chatham House" setting the issue of energy security from the perspective of developing countries, as part of the World Bank's preparations for the G-8 Summit in St. Petersburg, Russia.
- *How Are Developing Countries Coping with Higher Oil Prices?* (Knowledge Exchange Series, KES No. 6).
- *Potential for Biofuels for Transport in Developing Countries* (Knowledge Exchange Series. KES No. 4).
- *Several SDN Energy Week Events, including keynote session on regional energy trade.*

Operational Leveraging

- An Implementation Strategy for China's Energy Security Objectives activity.
- China: Policy Advice on Implementation of Clean Coal Technology projects — Phase II activity.
- *Power System Planning in India: Incorporating Environmental Externality Costs and Benefits* (Produced and disseminated by the Region).
- *Extending the Use of Domestic Gas Resources to Inland Provinces* (ESMAP Technical Paper 103/06).
- *Integration Strategy for Southern Cone Gas Networks* (ESMAP Technical Paper 113/07).
- *Potential and Prospects for Regional Energy Trade in the South Asia Region* (ESMAP Formal Report 334/08).

Source: ESMAP activity database and annual block grant agreements, June 2008.

In 2007, ESMAP-supported activities in the energy security field continued to have an impact on global discussion and country activities. The main ESMAP work on energy security covers a number of factors that affect developing countries' energy security—both positively and negatively. *Some important energy security studies completed in 2007 include the following: Sustainable Energy in China: The Closing Window of Opportunity (Flagship Report); Strategy for Coal Bed Methane (CBM) and Coal Mine Methane (CMM) Development and Utilization in China* (ESMAP Formal Report 326/07); *Turkey's Experience with Greenfield Gas Distribution since 2003* (ESMAP Formal Report 325/07); and *Strengthening Energy Security in Uruguay* (ESMAP Technical Report 116/07).

One activity within the thematic area of energy security was instrumental in providing the analytical background for regional energy integration in South America. This study—producing the publication *Integration Strategy for Southern Cone Gas Networks*[8] —originated in response to requests from the participating governments. It culminated in a technical and economic evaluation of the merits of gas integration in the southern cone. The study, presented at a major conference, was published in both Spanish and English and has been distributed to all concerned parties. A protocol, now being prepared for ratification by the governments of the countries involved, will cover the basic principles under which gas pipelines should be constructed and operated.

ESMAP work also analyzes the harmful impacts of fossil-fuel prices on poor countries and on poor people living within those countries. An ESMAP-supported activity, Oil Price Volatility (see Box 3.1) builds on previous years' work of analyzing the impacts on countries of high oil prices and providing policy responses to those prices and impacts. The Oil Price Volatility study is unique in its emphasis on the problem of price volatility rather than price increases, the focus of much previous work. In addition, the study examines a number of possible policy responses to volatility—including national hedging, security stocks, and price-smoothing schemes—to determine the circumstances under which each might be appropriate.

An important publication on energy security issues in the past year was *Accelerating Clean Energy Technology Research, Development, and Deployment.*[9] This report was the culmination of an ESMAP-supported project analyzing what role the World Bank Group could play in accelerating the commercialization of advanced energy technologies for developing countries. The technologies considered include renewable energy, energy efficiency, and high-efficiency fossil-fuel plants. Recognizing the importance of such technologies for developing countries, as well as the cost and reliability obstacles that deter their deployment, this project examined several nonenergy sectors, including the Consultative Group on International Agricultural Research (CGIAR), the Advance Market Commitment (AM), and The Human Genome Project (HGP). Based on these cases, the report reached several important conclusions concerning ways energy technical innovation can serve poorer countries.

Box 3.1: Coping with Oil Price Volatility

In addition to the usual dissemination of ESMAP reports via the internet, the *Coping with Oil Price Volatility* report was also shared with the Nigerian Minister of State for Energy (Petroleum), who requested a copy after having been shown the report by the World Bank country economist.

Meanwhile, the World Bank Uganda country team distributed 10 copies of the report to key staff in that country's Ministry of Finance.

A presentation on the preliminary findings of the study was also given in February 2008 to the Government of Malaysia, which expressed considerable interest, particularly on the chapter on price smoothing.

Separately, a local think-tank in Argentina saw the report and invited one of the authors to give a presentation in a session on commodity price volatility at a conference on productivity growth. The session targeted particularly the business community in Argentina.

Source: Masami Kojima, Lead Energy Specialist COCPO.

8. ESMAP Technical Report 113/07.
9. *Accelerating Clean Energy Technology Research, Development, and Deployment: Lessons from Non-energy Sectors.* Working Paper No. 138. This ESMAP report was published by EXTOP under the World Bank Working Paper series (ISBN 978-0-8213-7481-8).

Another major activity launched in 2007 is the East Asia Regional Energy Flagship Study. This activity—to result in a flagship product for the World Bank Group's East Asia and the Pacific Region—examines the major themes running across the East Asia client countries, specifically energy security, the drive for clean energy, and institutional effectiveness and efficiency. Through continual consultation with the country governments, this activity aims to provide a new framework by which the Bank and the countries themselves can approach the region's major energy issues.

Within the field of regional integration, ESMAP this year launched a global activity, highlighted in last year's SDN Week, to examine lessons learned and best practices in regional power-sector integration. Governments are interested in considering regional energy integration as a tool for enhancing energy security. Government sharing of resources might act as a catalyst for new supply infrastructure investments. At present, sufficient experience has accumulated worldwide to warrant a global analysis of the lessons learned so far. This might include the major obstacles faced in such regional energy integration and suggestions for ways to overcome them. It is anticipated that a number of paradigms will emerge for power-sector integration that can be applied to particular regional circumstances.

Energy Efficiency

Energy efficiency options form the underlying theme for addressing the problems of energy security, for mitigating the impact of energy vulnerability, for improved competitiveness, for contributing to economic growth, and for mitigating the potential risks of global climate change. Significant opportunities for energy efficiency improvements exist across different countries and sectors. Activities of ESMAP's energy efficiency thematic area have helped to develop new sector policies, to support the integration of these policies and of mitigation instruments in sector-policy dialogues and programs, and to increase investment in energy efficiency and other energy resource portfolio diversification programs. Areas of particular concern and achievement have been energy efficiency program scale-up and efficiency-related low carbon strategic initiatives.

Even though energy efficiency offers one of the most cost-effective options for mitigating global climate change, for most developing countries much of the potential for efficiency improvements remains unexplored. At present, for example, the share of energy efficiency goals in the carbon market trade has been small compared to their potential effects. With ESMAP's support, it is hoped that the groundwork laid during the last few years will lead more energy efficiency projects to take advantage of the clean development mechanism (CDM). Promoting energy efficiency in developing countries will remain a central concern, as it facilitates ESMAP's support for economic growth, energy security, poverty reduction, and environmental sustainability.

The objective of energy efficiency scale-up in the developing world has become a key emphasis of the ESMAP portfolio. While many countries with high energy intensities and high potential for energy efficiency improvements have strong public-sector institutions and an emerging private sector with good technical competencies, many others languish behind due to many barriers. Various activities under ESMAP help address these institutional, policy, regulatory and technical barriers and have developed good practice solutions for converting the enormous cost-effective potential for energy efficiency improvements into large-scale investments.

Key efforts have supported financing and best-practice initiatives. The findings of the ESMAP activity Developing Financial Intermediation Mechanisms for Energy Efficiency Projects in Brazil, China, and India have been published as a flagship report: *Financing Energy Efficiency Lessons from Recent Experience with a Focus on Brazil, China, and India.*[10] In China, this activity led to the preparation of energy efficiency loans through local financial intermediaries; in Brazil, it has helped to establish a credit line to guarantee 80 percent of the credit risks in energy efficiency activities.

[10]. Flagship ESMAP Report published under EXTOP's stand-alone book series (ISBN 978-0-8213-7304-0).

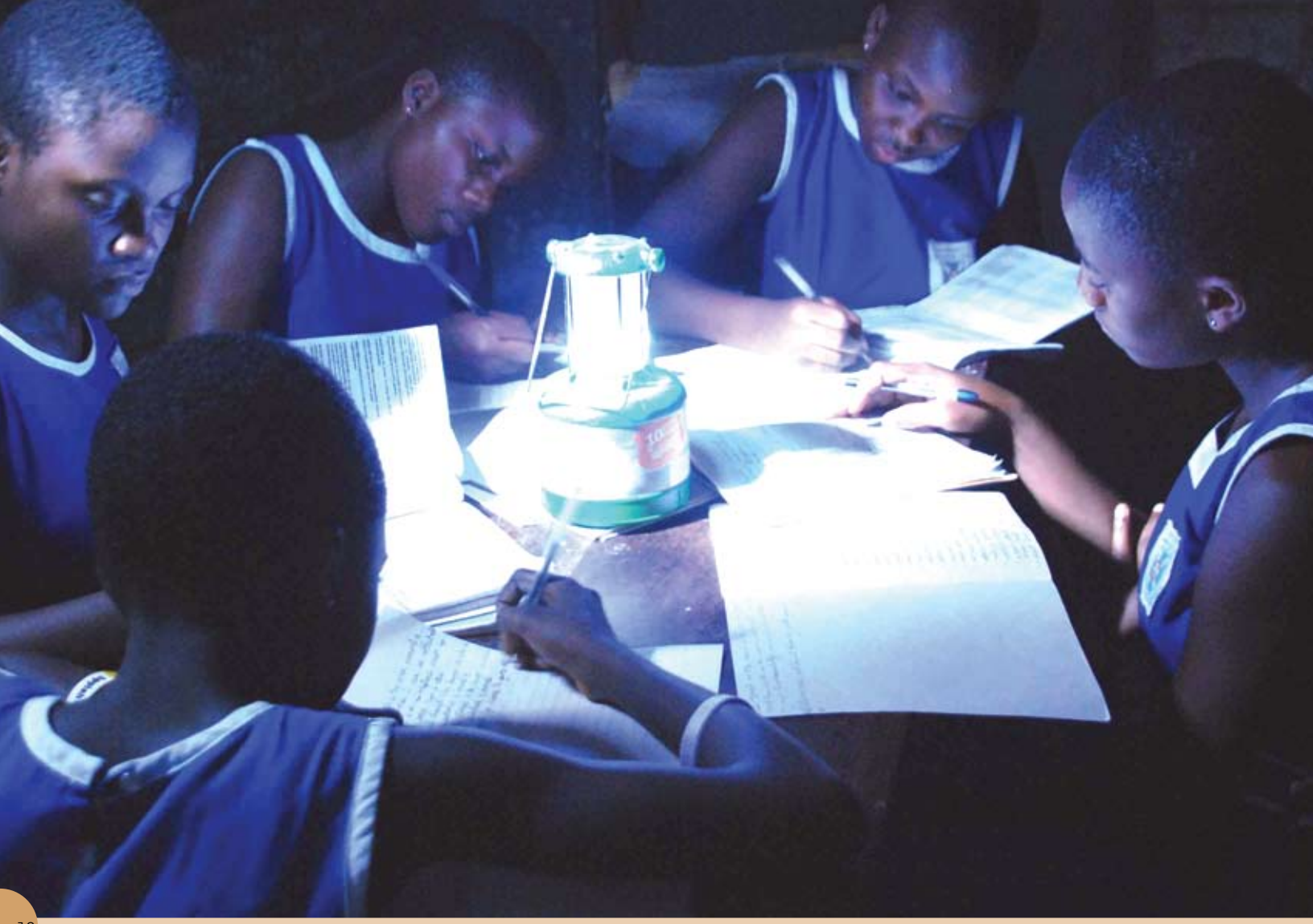


Table 3.2: Key Energy Efficiency Activities, January 2007–June 2008

Think Tank

- *An Analytical Compendium of Institutional Frameworks for Energy Efficiency Implementation* (ESMAP Formal Report 331/08).
- Energy Efficiency Needs and ToolKit Assessment. (The activity contributed to the preparation of the World Bank's Energy Efficiency for Sustainable Development [EEfSD] Scale-Up Action Plan).
- The G+5 Countries Energy Efficiency Indicators Project (a joint activity of the World Bank and IEA).
- *Financing Energy Efficiency Lessons from Recent Experience with a Focus on Brazil, China, and India* (Flagship report). [10]

Knowledge Clearinghouse

- *Roundtable on Bridging the Energy Efficiency Divide: Implementation Models and Best Practices* (co-organized by the World Bank and the government of Japan, July 19, 2007, Tokyo, Japan. (ESMAP Workshop Proceedings 007/08).
- Energy efficiency sessions during energy events of SDN Week 2008.
- Combined Cycle Gas Turbines Workshop 2007 (shared experiences on operation and maintenance contract (O&M) practices between power companies).

Operational Leveraging

- *China: Development of Pro-Poor National Heat Pricing and Billing Policy* (ESMAP Formal Report 330/08).
- Mongolia—Urban Heat Pricing & Regulation activity.
- Ukraine—Thermal Power Plant Rehabilitation: Assessment of Needs, Costs, and Benefits activity.
- *Opportunities for Pooled Financing Facilities in Poland* (publication in process).
- *Innovative Financial Mechanism to Implement Energy Efficiency Activities in Mexico* (publication in process).
- India—Best Practice of Coal-Fired Power Plant Rehabilitation activity.

Source: ESMAP activity database and annual block grant agreements, June 2008.

The report, *An Analytical Compendium of Institutional Frameworks for Energy Efficiency Implementation (ESMAP Formal Report 331/08)* has examined the potential role and structure of alternative public-sector energy efficiency institutional models for creating an enabling business environment for the private sector, utilities, manufacturers, end-users, energy service companies (ESCOs), and financial institutions to promote energy efficiency investments.

The findings of this effort have already facilitated the Bank's efforts to support the development of new energy efficiency agencies, for instance, in Morocco. In India and Ukraine, respectively, ESMAP supported a review of best practices for coal-fired power plant rehabilitation and identification of options to maximize the benefits from existing thermal power plants through improvement of efficiency, reliability, and competitiveness. In Brazil, ESMAP supported the development of the Energy Efficiency Strategy, focused on the development of private-sector investment in public-sector energy efficiency improvements.

The G+5 Countries (Brazil, China, India, Mexico, and South Africa) Energy Efficiency Indicators project is an ongoing effort involving the World Bank, the Inter-American Development Bank, and the International Energy Agency. Its aim is to extend the experience and practice of the systematic accounting of energy efficiency indicators to the developing countries. The activity examines the relevance, applicability, and adaptability of current systems of energy efficiency performance indicators in the Organization for Economic Co-operation and Development (OECD) to the developing countries.

The growing emphasis, in both the public and the private sectors, on an expanded role for clean energy initiatives in reforming energy sectors throughout the world has been driven by the risks of global climate change and air pollution. This dimension was highlighted during the last year by heightened concerns about the global environment raised in the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Reports. As part of the implementation of recommendations in the Clean Energy Investment Framework, a review has been conducted of clean energy technology acceleration case studies. This report was a focus of a SDN Week session at the World Bank.

The interventions recommended in the Energy Efficiency for Sustainable Development (EEfSD)–the bank's energy efficiency scale up action plan–are an integral part of the of the Clean Energy Investment Framework and, subsequently, the Development and Climate Change: A Strategic Framework for the World Bank Group (DSCCF). The EEfSD strategy includes interventions at three levels: policy and regulatory; sector and subsector; and end-use equipment and appliances. The EEfSD action plan places priority on countries with the highest energy intensities, rapid energy-sector growth and high energy consumption.

Another recently completed activity, Scaling-Up Demand-Side Energy Efficiency Improvements through opportunities under the clean development mechanism (CDM), examined synergies between energy efficiency and the carbon market. It identified mechanisms through which programmatic CDM can promote implementation of smaller, dispersed, end-use (demand-side) energy efficiency programs in developing countries. At present, for example, the share of energy efficiency goals in the carbon market trade has been small compared to their potential effects. With ESMAP's support, it is hoped that the groundwork laid during the last few years will lead more energy efficiency projects to take advantage of CDM.

Renewable Energy

ESMAP's work during 2007 and 2008 focused on promoting renewable energy by providing countries with technical assistance on policy analysis, developing subsector strategies, and exploring innovative solutions for overcoming barriers to development of renewable energy markets. This focus is consistent with World Bank commitments obtained from the 2004 Bonn International Conference on Renewable Energy and the subsequent G-8 debate on climate change at Gleneagles, Scotland to scale up renewable energy. The intent was to provide developing countries with a wider range of energy solutions to meet their growing needs. Renewable energy has increasingly been incorporated as an option in national energy planning, drawing on the experiences of the most successful countries.

Table 3.3: Key Renewable Energy Activities, January 2007–June 2008

Think Tank

- *Considering Trade Policies for Liquid Biofuels Global Programs* (ESMAP Special Report 004/07).
- *Risk Assessment Methods for Power Utility Planning Global Programs* (ESMAP Special Report 001/07).
- Accounting for Fuel Price Risk in Power Systems Planning activity *(2008).*
- *Potential for Biofuels for Transport in Developing Countries* (ESMAP Formal Report 312/05).
- *Scaling Up Renewable Energy in China: Economic Modeling Method and Application* (Knowledge Exchange Series Note No. 10).
- *Unlocking Potential, Reducing Risk: Renewable Energy Policies for Nicaragua* (ESMAP Special Report 003/07).

Knowledge Clearinghouse

- *Hedging Mexico's Electricity Bets: The Case for Renewable Energy, Latin America and the Caribbean* (Knowledge Exchange Series Note No. 9).
- Sessions at energy events during SDN Week 2008.
- *Proceedings of the International Grid-Connected Renewable Energy Forum* (ESMAP Formal Report 324/06).
- World Bank Group Progress on Renewable Energy and Energy Efficiency.
- *Renewable Energy and Energy Efficiency Financing and Policy Network: Options Study and Proceedings of the International Forum* (ESMAP Formal Report 303/05).
- European Wind Energy Conference in Milan, Italy.

Operational Leveraging

- Support for Wind Measurement Program Development in Bosnia-Herzegovina, Kenya, and Bolivia activity.
- *Shanghai: Developing a Green Electricity Scheme* (ESMAP Technical Paper 105/06).
- *Bhutan Hydropower Sector Study: Opportunities and Strategic Options (ESMAP Technical Report 119/07).*
- Private Sector, Small-scale, Grid-connected Renewable Power Generation in Sri Lanka: A Review of the Experience of the Past Decade (publication in process).

Source: ESMAP activity database and annual block grant agreements, June 2008.

Box 3.2: Dealing with Subcritical Orders for Wind-Power Demonstration Activities

An example of operational support provided by ESMAP involved an assessment of problems and solutions of the early demonstration projects for wind-power generation. The problems recently came to light when World Bank projects in Cape Verde and Djibouti stalled because no bidders came forward on tenders for small wind activities.

One of the fundamental problems facing small wind-power demonstration activities at present is the short supply situation in the mainstream large wind-turbine industry. This is due to a lack of capacity in key component industries, including generator and gearbox manufacturing. The already tight market situation has been put under additional pressure due to political attention and actual demand for renewable energy in both developed and developing countries. In this seller's market, major turbine manufacturers are consequently focusing their attention on large-scale, profitable, low-risk activities in OECD countries, basically leaving out the smaller, higher-risk orders from developing countries.

The problems faced in Cape Verde and Djibouti were investigated by ESMAP through discussions with developers and turbine manufacturers. As a result, recommendations were made that these countries, the Philippines, and Yemen, remove some of the size restrictions on wind turbines and increase activity or order sizes by bundling activities together and removing some restrictive tendering requirements. These wind-generation activities are still unlikely to draw major manufacturers; but as reconfigured, they may be better suited to the capabilities of medium-sized manufacturers, particularly providers of smaller turbines, which may have a chance to recover a certain market share in the presently tight market. Recovery of this market segment is clearly in the strategic interests of many of the Bank's client countries, because smaller turbines are much easier and less expensive to handle in terms of installation logistics (e.g., transport, craning) and grid integration.

Source: Soren Krohn, ESMAP Sr. Energy Specialist.

During 2007 and early 2008, ESMAP was instrumental in providing high-quality analytical work on renewable energy policies in many countries around the world (Table 3.3). One example of this work was the study, Policy and Strategy for Promoting Renewable Energy in Nicaragua *(Unlocking Potential, Reducing Risk: Renewable Energy Policies for Nicaragua,* ESMAP Special Series Report 003/07). This study examined policies inhibiting the growth of renewable energy in Nicaragua and made recommendations on how the government should address the issues moving forward. The results of this work were incorporated into a new legal framework adopted by the government. In addition, work on renewable energy in China was highlighted in the Knowledge Exchange Series Note No.11: *Scaling Up Renewable Energy in China: Economic Modeling Method and Application.* This work investigated least-cost solutions for implementing renewable energy in China by examining supply curves for renewable energy and competing energy sources. The project on which this work was based was very important in the development of a major renewable energy loan in China, the China Renewable Energy Scale-Up Program. During the past year, ESMAP has also facilitated dissemination of knowledge and best practices in renewable energy. In May 2007, ESMAP participated in the European Wind Energy Conference in Milan, Italy and shared World Bank experience in wind energy work, particularly issues relating to cost. ESMAP also established a Renewable Energy Thematic Working Group in June 2007 to disseminate and share knowledge on renewable energy technologies. The group has so far held several meetings covering issues such as, deep-green global energy scenarios, the world market situation for wind power, and the geothermal energy outlook.

The work of ESMAP also has had significant results for the World Bank Group's energy operations. In one important result, Morocco enacted legislation in 2008 on renewable energy and energy efficiency, based on technical assistance from ESMAP. ESMAP also supported work to achieve better results in tendering for wind-power generation equipment in the prevailing tight market (Box 3.2). This

resulted in a redesign of procurement procedures, and as a consequence, projects have made adjustments better adapted to the sector's recent business practices.

ESMAP also worked with World Bank operational units in developing and preparing renewable energy activities and evaluating theses investments' development impact. This support ranged from projects promoting renewable energy strategy for Colombia, a wind program for Jordan, and a geothermal strategy for Indonesia. Technical reviews were completed for renewable energy legislation for Morocco, for tendering documents for large wind activities in Mexico, and for assessing renewable resources for Yemen. To facilitate International Finance Corporation (IFC) financing of new renewable technology and market development, ESMAP provided an initial assessment of various wind energy technologies, procedures, and business opportunities.

Renewable energy will only increase in importance for both developed and developing countries in the coming years. ESMAP will continue to support expansion of renewable energy development around the world through quality analytical work promoting appropriate renewable energy policies; through dissemination of its work using high-quality publications and knowledge events; and through project implementation via the regional energy operations of international organizations.

Energy Poverty

Energy as a means for poverty reduction remains on the international agenda, although enabling poor people to gain access to modern energy services remains a challenge around the world. As a consequence, it remains necessary to examine the relationships between energy and poverty, to disseminate lessons learned in a timely way, and to encourage the use of best practices for alleviating energy access problems in developing countries. ESMAP continues to provide useful analytical contributions to these efforts, and it has been able to integrate key findings into country-level policy dialogues and World Bank operational activities. This theme is of critical importance for ESMAP and has been an important feature of the program since its very beginnings in the early 1980s. Over the years, work on energy and poverty has evolved, however, and these changes are also reflected in important ESMAP activities during the past year. Due to the diverse nature of ESMAP funding for Energy and Poverty, this section reviews the main energy and poverty theme, as well as the work completed under the ESMAP Energy SME program.

The 2007 achievements on Energy and Poverty include the completion of a major study on rural electrification, initiation of a new program on biomass energy, and development of methods for addressing the impact of energy for households in developing countries. Major knowledge tasks were also completed, including a pioneering study on successful rural electrification programs in developing countries, a rural energy strategy for Bangladesh, and a methodology for measuring energy poverty (Table 3.4). In addition, during this period, the issue of energy for poor households in periurban areas was identified as a major new area for ESMAP concentration. Finally, a successful ESMAP activity for providing grants directly to NGOs promoting small projects on energy poverty was closed. This project involved both cooperation with the Global Village Energy Partnership (GVEP) and administration of a Development Marketplace–style small grants project called the GAPFund. This report includes many photographs relating to the work completed by the grantees of this program. Last but not least, during the year, a wide variety of support was provided for pre-investment activities for regional energy operations.

The breadth and depth of work under the Energy Poverty thematic area has established ESMAP's reputation as a principle source for analytical work and operational support on energy access issues. Several studies were published during the past year that will be influential in the field for many years to come. In addition, several important workshops and dissemination events have highlighted the efforts of the World Bank Energy and Poverty Thematic Group. These publications and events illustrate the depth of the group's work on energy poverty and its commitment to disseminate it widely. The major Energy and Poverty achievement of the year was the publication of its flagship study, *The Challenge of Rural Electrification: Strategies for Developing Countries,* (Published by RFF Press and ESMAP) along with a major dissemination workshop on the topic held in Washington, DC, in October 2007 (Box 3.3). The book explains how to meet the challenge of providing electricity to rural areas through appropriate financial and subsidy policies, how to achieve clear institutional mandates for dealing with issues as they emerge, and how to deal with both political and local participation issues. *The Challenge of Rural Electrification* will be very important for the many countries in the world just now beginning to initiate rural electrification programs, including many in Africa, where rural electrification rates are typically less than 10 percent.

Table 3.4: Key Energy and Poverty Activities, January 2007-June 2008

Think Tank

- *Brazil: How do Peri-urban Poor Meet their Energy Needs: A Case Study of Caju Shantytown, Rio de Janeiro* (ESMAP Technical Report 094/06).
- *Cleaner Hearths, Better Homes: Improved Stoves for India and for the Developing World* (publication in process).
- *Household Energy, Indoor Air Pollution, and Health: A Multisectoral Intervention Program in Rural China.* (ESMAP Special Series Report 002/07).
- Framework for monitoring and evaluation (M&E) of rural electrification activities in Bangladesh, Peru and Vietnam under the activity Impact of Rural Electrification on Development.
- *Welfare Impacts of Rural Electrification: A Case Study from Bangladesh* (to be published by DEC).
- *The Welfare Impact of Rural Electrification in Vietnam* (draft report funded in part by the Multi-sector survey ESMAP activity and cofinanced by the DIME program in DEC, in process).

Knowledge Clearinghouse

- *The Challenge of Rural Electrification: Strategies for Developing* Countries (Flagship report, RFF Press, Washington, D.C., July 2007, ISBN 978-1-933115-43).
- Session on Biomass Energy, Rural Electrification, and Microcredit and small energy service providers, energy events of SDN Week.
- Workshop on Gender and Energy, to better include gender in World Bank energy operations, May 2008.
- Joint ESMAP-IEG Workshop on the Welfare Impact of Rural Electrification, June 2008.

Operational Leveraging

- Energy Access in Africa: Scale-Up Initiative, jointly with AFTEG.
- GVEP GAPFund activity, completed in January 2008: more than 20 activities in 10 countries, worth in total over US$1 million, financed and disbursed.
- *Restoring Balance: Bangladesh's Rural Energy Realities* (publication in process).
- *Haiti: Strategy to Alleviate the Pressure of Fuel Demand on National Woodfuel Resources* (ESMAP Technical Report 112/07).

Source: ESMAP activity database and annual block grant agreements, June 2008.

Obtaining high-quality biomass energy is one of the most important issues facing the energy poor. We know that the poor use primarily biomass energy, and yet programs to promote its clean and efficient use have been very difficult to implement for a variety of reasons. ESMAP is committed to alleviating biomass energy problems in developing countries and has recently added a biomass energy specialist to its staff. In addition, several very important studies have been published that demonstrate new approaches to the problem. *Household Energy, Indoor Air Pollution, and Health: A Multisectoral Intervention Program in Rural China* (ESMAP Special Series Report 002/07) highlights China's improved stove program and its effectiveness in alleviating problems of indoor air pollution. *Haiti: Strategy to Alleviate the Pressure of Fuel Demand on National Woodfuel Resources* (ESMAP Technical Report 112/07) presents a strategy developed by and now being implemented as part of a World Bank technical assistance project. Finally, a flagship publication on improved stoves in India—*Cleaner Hearths, Better Homes: Improved Stoves for India and for the Developing World*—was finalized in June 2008 and makes recommendations on new ways to promote stoves in India and other developing countries.

During the year, ESMAP also completed its involvement and support of the Global Village Energy Partnership Action Program Fund (GAPFund) by successfully closing all projects and holding a learning workshop during SDN Week 2008. This small grants program promotes energy services for the poor through nongovernmental organizations and small energy enterprises. In all there were 20 winning projects from a wide range of countries, including India, Brazil, Honduras, Philippines, Tanzania, Cambodia, Guatemala, Kenya, Sri Lanka, Vietnam, and Zambia. Virtually all of the projects were successful. One notable project for improving stoves in Brazil, led by Instituto de Desenvolvimento Sustentável e Energias Renováveis (IDER), financed a pilot stove development and reforestation program. The project resulted in a new state government commitment to finance an additional 4,000 new stoves from IDER and made Brazil's national news on a widely popular television magazine show. Historically, ESMAP was set up strictly to carry out Bank-implemented work, tapping into and benefiting from the diverse pool of Bank talent. The GAPFund opened up new global energy partnership opportunities for ESMAP through closer engagement with community-based organizations and their projects in the field.

A major new initiative begun in early 2008 involves monitoring and evaluation of rural electrification and development of techniques to measure an energy poverty line. The well-known goals of rural electrification programs are to enhance quality of life and to stimulate economic productivity in rural areas. Also, well known are the difficulties even for the most sophisticated researchers, of evaluating the impacts of single interventions. The World Bank Group has felt a pronounced need for greater emphasis on impact evaluation of program interventions, especially for infrastructure programs. This new initiative addresses that need in two ways. The first is by examining the development impact of rural electrification programs in countries with existing monitoring and evaluation surveys—mainly Vietnam and Bangladesh. The second is by developing, and assisting operational staff with, prospective projects that include quality monitoring and evaluation components. The results so far are quite encouraging. Using techniques for identifying causal factors, the impacts of rural electrification on income appear to be in the range of 10 to 20 percent, with an apparent continuing increase over time.

Included in the work on energy poverty are a range of efforts providing assistance to small and medium enterprises that supply energy services to the poor. These efforts are quite important, as most larger-scale energy service businesses such as grid electrification and LPG distributors, service mainly wealthier households often in more densely populated urban areas. This program is detailed in the next section.

Energy SME Program

In most developing countries, efforts to formulate innovative ways to deliver modern energy services to the poor confront formidable institutional and regulatory barriers. The emerging experience is that small and medium enterprises (SMEs) are better positioned than central utilities to deliver decentralized and small-scale energy services.

ESMAP's Energy SME Program is unique and perhaps one of the first global initiatives attempting to include SMEs in the energy agenda in a comprehensive and sustained manner (Table 3.5). In 2007, the ESMAP Energy SME initiative supported 13 projects in 12 countries and 1 regional program in Africa. The projects continue to demonstrate enormous potential to make significant impact in the relatively neglected area of energy-service delivery to the poor. For example, the program supports a variety of stakeholders in Haiti in an effort to unblock barriers to an effective SME industry providing energy-efficient and reliable cookstoves (see Box 3.4).

The TA for Improved Small-Scale Energy Supply in Nicaragua was carefully designed to complement that country's Rural Electrification Project for Isolated Areas. Two specific pilot projects have been developed: (1) a Pico photovoltaic (PV) to reach the very poor by strengthening new and existing SMEs through a capacity-building initiative and an incentive scheme to facilitate SME engagement; (2) Pico hydropower and village

Box 3.3: Transformative Power: Meeting the Challenge of Rural Electrification

Today only somewhat more than 1.6 billion people—less than 25 percent—of rural populations in developing countries have access to electricity, despite the known ability of rural electrification to transform human lives. Electricity in households allows study and other productive activities during evening hours, operation of electric appliances to reduce household drudgery and eliminate indoor air pollution, and use of electricity-driven irrigation and post-harvest processing to transform subsistence agriculture into profitable enterprises. Despite these proven benefits, many energy policymakers hesitate to invest in rural electrification: the challenge of serving remote rural areas is formidable, and failed subsidies are all too common. Within this context, *The Challenge of Rural Electrification: Strategies for Developing Countries* (published by RFF Press and ESMAP) draws on the experience of 10 diverse countries to identify characteristics of effective rural electrification programs. *The Challenge of Rural Electrification* compiles the best worldwide rural grid-electrification experiences in developing countries and focuses on institutional issues, financing, subsidies, and practical implementation.

Rural electrification presents a daunting task. Rural populations are often widely dispersed across difficult terrain, raising the cost of per-consumer investment and making service quality difficult to maintain. Poor rural customers often cannot afford the up-front connection costs of grid electrification, and their low consumption levels result in low load factors. Politicians may distort electrification extension and interfere with pricing, bill collection, and disconnection policies. Moreover, the problems of local communities may be overlooked, resulting in disputes over rights of way, and power-sector reform can leave rural people without service.

In the face of these challenges, the detailed case studies of successful programs around the world offer hope that accelerating the pace of rural electrification in developing countries is possible. The case studies find that well-planned, carefully targeted, and effectively implemented grid-based electrification programs can provide rural people with enormous social and economic benefits. While electrification alone cannot solve all rural development problems, poor people in developing countries cannot take full advantage of other forms of development assistance without access to an electricity supply. Putting the principles derived from these case studies into practice can help to ensure that many more consumers will enjoy the benefits of an electricity supply at acceptable costs without burdening their national governments and power utilities with unsustainable subsidies.

Source: Douglas Barnes, ed. (2007), The Challenge of Rural Electrification: Strategies for Developing Countries (Washington, DC: Resources for the Future Press).

Table 3.5: Key Energy Small Medium Enterprise Program (SME) Activities, January 2007–June 2008

Outputs	Progress
Assessment of the enabling environment and incentive framework	• Case studies completed in Cameroon and Guinea, Laos, Cambodia, Peru, Bolivia-IFC, and Burkina Faso. • Sixteen country-specific baseline assessments undertaken (Lighting Africa [regional], Laos, Cameroon, Cambodia, Peru, Nicaragua, Haiti, Bolivia, Nicaragua, and Guinea). • Projects helping to lower or remove at least 12 barriers to energy SME development (e.g., access to debt finance, import tariffs, capacity, raw material cost, and lack of information).
Mobilization of stakeholders and institutional strengthening	• Twenty-five consensus-building consultations with stakeholders in 11 countries (Lighting Africa [regional], Cambodia, Cameroon, Mongolia, Peru, Nicaragua, Haiti, Bolivia, Burkina Faso, Tanzania, and Guinea). • Eighteen capacity-building experiences documented in 8 countries/projects (Lighting Africa [regional], Cameroon, Mongolia, Haiti, Bolivia-IFC, Burkina Faso, Tanzania, and Guinea), e.g., carbon finance work shop, operational manual development, and various training programs. • Five strategy papers prepared and adopted by local governments in Laos, Cambodia, Cameroon, and Tanzania.
Design, development, and implementation of pilot projects	• To date, 18 pilot projects developed and initiated; e.g., in Bolivia, Cambodia, Mongolia, Laos, Peru, and Haiti. • Action plans to scale up a pilot project developed in Cameroon, Cambodia, Nicaragua, Haiti, and Bolivia.
Facilitation of financing mechanism	• Nearly 50 banks identified in four countries (40 in Cambodia, 1 in Haiti, 5 in Tanzania, and 2 in Guinea). • Financing instrument supply-demand gaps identified in 5 countries (Lighting Africa [regional], Cambodia, Bolivia-IFC, Tanzania, and Guinea). • New financial instruments made accessible to SME energy service providers in Cambodia, Cameroon, Burkina Faso, and Guinea. • Four government-led funding initiatives supporting SME energy service providers in 4 countries (Haiti, Bolivia, Tanzania, and Guinea).
Capacity building	• Training programs undertaken in at least 8 projects/countries (Lighting Africa [regional], Cambodia, Cameroon, Mongolia, Haiti, Burkina Faso, and Haiti). • More than 200 SME energy service provider employees trained thus far in programs in Cambodia, Mongolia, Haiti, and Guinea. • Eight private-sector forums organized in 6 countries (Cambodia, Mongolia, Haiti, Bolivia-IFC, Tanzania, and Guinea).

Source: Energy SME Annual Report 2007.

grids oriented toward community solutions engaging SMEs in battery-charging programs dispersed around village grids. In Peru, the program on Small and Medium Enterprises for Energy Services Delivery is integrating SMEs into the rural-electrification sector to boost the rural energy supply and to strengthen off-grid energy supply chains. Specifically, the project is helping to define simplified concession arrangements, including the necessary institutional and legal arrangements for pilot SMEs. The project also creates key business development tools for SMEs in the electricity sector (e.g., standardized and simple financial accounting, billing practices, and potential business models) and outlines strategies for navigating legal/regulatory challenges.

To develop the role of SMEs in energy services in Cambodia, the Decentralized Energy Services in Cambodia Program features several components: (i) improved household cookstoves and palm sugar stoves, (ii) biomass gasifiers for village electrification, (iii) efficient battery charging, and (iv) LED lanterns. Together, these projects tackle various energy issues facing rural communities, which will benefit by increased and improved access to energy services.

Building on IFC's Lighting the Bottom of the Pyramid project, the Energy SME Program supports the Lighting Africa activity to accelerate the uptake of modern lightning services by mainly rural households and enterprises as yet without access and currently relying on kerosene lanterns and battery lighting.

This project leverages resources and knowledge exchange from associated programs such as Global Environment Facility (GEF), Public-Private Infrastructure Advisory Facility (PPIAF), International Finance Corporation (IFC), and ESMAP.

The Energy SME Program has been instrumental in linking a number of country initiatives. The Lighting Africa initiative is linked, for example, to the Bolivia and Nicaragua Pico PV activities providing support for design, development, and marketing of improved lighting products by new and existing SMEs. Specifically, market research in several African countries is shaping the design of Bolivian and Nicaraguan activities aiming to deliver low-cost modern lighting products to the poorer segments of the population.

Box 3.4: Haiti: Building a Sustainable Market for Improved Stoves

In Haiti, the poorest country in the Western Hemisphere, more than 70 percent of the population lives below the poverty line. With rising charcoal prices and rapid deforestation, many Haitians are unable to afford cooking fuels, leaving them able to eat only one cooked meal per day.

The ESMAP Energy SME Program assists Haitian SMEs in developing better infrastructure for the production of energy-efficient stoves that reduce the cost of cooking for urban households and improve health conditions.

To generate sustainable production of MIRAK* improved stoves, the project facilitates the modernization of the supply distribution chain. Training is helping artisans to develop management and business skills, form small enterprises, and improve their production capacities. To date, over 70 artisans have been trained as potential producers of MIRAK stoves. These artisans are expected to form at least 10 SMEs and to produce more than 50,000 improved stoves in the initial phase. A public awareness campaign has also been launched to educate consumers on the economic, health, and environmental benefits of the stoves. This project is helping to strengthen the country's SME and private sector by improving the business model and production scheme of energy-efficient stoves. Poor households, along with entrepreneurs, directly benefit from the improved stoves program.

Source: Energy SME Annual Report 2007.
** The MIRAK is a type of stove used in Haiti.*

Table 3.6: Key Market Efficiency and Governance Activities, January 2007–June 2008

Think Tank

- *Lessons of Power Sector Reform 1988–2004: A Review of ESMAP Interventions in Bolivia, Poland, Ghana, and Thailand* (published by the Region in September 2007).
- *Potential and Prospects for Regional Energy Trade in the South Asia Region* (ESMAP Formal Report 334/08).
- *Designing Strategies and Instruments to Address Power Activities Stress Situations* (publication in process).
- The final internal report for the Roundtable: Governance Standards/Code of Conduct/Performance Benchmarks for Electric Power Public-Private Partnerships (PPPs) was completed.

Knowledge Clearinghouse

- Disseminated the reports *Ghana Poverty and Social Impact Analysis of Electricity Tariffs* (ESMAP Technical Paper 088/05) *and Sector Reforms and the Poor: Energy Use and Supply in Four Countries: Botswana, Ghana, Honduras, and Senegal* (ESMAP Technical Paper 095/06) to the World Bank internal audience and to external interested parties through two brown-bag lunches.
- *Experiences with Oil Funds: Institutional and Financial Aspects* (ESMAP Formal Report 321/06), disseminated in preparation for the Spring 2006 G-8 meeting, highlighting the importance of energy and governance.
- Third World Forum on Energy Regulation (attended by 20 regulators from developing countries to further their knowledge of major energy regulatory issues).

Operational Leveraging

- The Development of Regional Power Activities for West Africa, Mekong, Central Asia, and Southern Europe activity.
- The Ghana Energy Policy Economic Sector Work activity produced a series of reports which were disseminated by the Region in 2007. ESMAP funds complemented the regional allocation for energy sector dialogue and project preparation. However, the final report was published as an internal product, *Ghana Energy Policy Economic and Sector Work Papers: The Electricity Sector.*
- *Vietnam: Gas Master Plan Review* activity (Report awaiting Government clearance).
- *Development of Power Generation in Southeast Europe: Implications for Investments in Environmental Protection* (ESMAP Technical Paper 123/08).
- *Turkey: Gas Sector Strategy Note* (ESMAP Technical Paper 114/07).
- *Paraguay: Estrategia Para el Desarrollo del Sector Eléctrico* (ESMAP Technical Report 122/08, Spanish only).
- *Republic of Yemen: A Natural Gas Incentive Framework* (ESMAP Formal Report 327/07).

Source: ESMAP activity database and annual block agreements, June 2008.

Market Efficiency and Governance

Sector reforms and regulatory development over the past decade aimed mainly at attracting international private investment to construct large energy activities in interconnected systems. Largely overlooked were access activities to provide energy for isolated rural and periurban areas and to utilize local entrepreneurship potential. ESMAP's Market Efficiency and Governance program focuses on creating the conditions necessary for energy markets to become more competitive and thus better able to contribute to poverty reduction (Table 3.6). This thematic area can contribute in several ways to energy and development, including developing environments to support efficient and stable energy markets, private-sector investment, and the poverty reduction agenda. In addition, market efficiency and governance initiatives can help improve the institutional capacity of policymakers and regulators, particularly for energy-sector revenue management. Finally, another important effort is the creation of effective public-private partnerships, especially those engaging SMEs with an energy development and delivery focus.

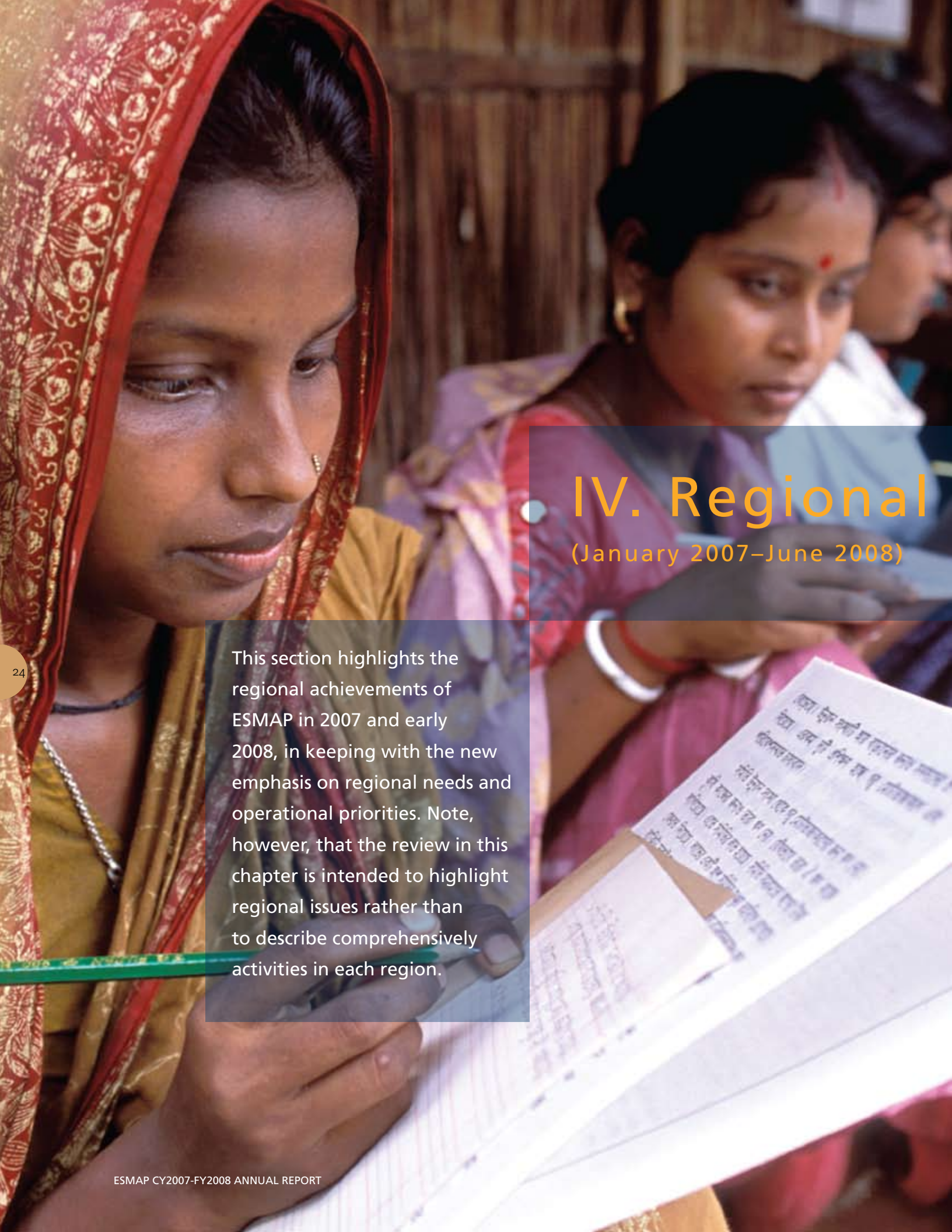
The types of projects supported by ESMAP during the last year included regional power interconnection and energy-market development, focusing on disseminating experience and drawing conclusions from earlier work on successful power-systems interconnection and pooling. ESMAP also supported regional energy trade through the preparation of the political framework agreement for the Mekong region under the Greater Mekong Sub-Region Power Trade Strategy. This activity culminated in the signing by Cambodia of a critical intergovernmental agreement. Several new initiatives for power-market regional integration were developed, including technical assistance for establishing the Water-Energy Consortium in Central Asia, Regional Energy Trade (South and Central Asia), and the Energy Integration of the Great Lakes Systems in Africa.

Responding to the Nigerian regulator, an ESMAP study provided techniques for supporting the county's initiative to develop tools to improve the regulatory review of power purchase agreements. This innovative work will give the power-sales contract greater credibility with developers as well as with local entities, such as the energy ministry, the utilities, and even the public at large. Another example involves Turkey, which, with ESMAP support, put in place capacity certificate schemes to enhance market-capacity operations. This capacity building for market operations represents an important advance in Turkey's regulatory structure. Another ESMAP-supported activity in Turkey is the Strategy to Expand Gas Distribution and Utilization, which resulted in the publication *Turkey: Gas Sector Strategy* Note (ESMAP Technical Report 114/07).

A activity influencing the World Bank Group's approach to energy trade within a single country has been the Gas Incentive Framework Study in Yemen.[11] This work examines different options for developing Yemen's as yet unrealized domestic gas production. While modest by regional standards, this resource could be a substantial boon for the Yemeni economy. The report analyzes field development with both export and domestic use in mind. The report suggests that the benefits of domestic use will likely outweigh those realizable from export. It cautions, however, that if the domestic option is selected, both gas transport and consumption infrastructures will need to be developed, because current demand is insufficient to consume the expected gas production.

Many lessons derive from energy market efficiency and governance efforts. First, ESMAP support for knowledge sharing, institutional development, and capacity development has a catalyzing impact on building the political consensus necessary for supporting activities that encourage efficient and stable energy markets, private-sector investment, and the poverty reduction agenda. In addition, commercialization of parastatals can be an effective tool for successful reform of poor-performing, state-owned enterprises. Further, public-sector capacity must be enhanced to adequately support reforms in the private sector. Finally, to maximize the benefits to the poor of sector reform, pro-poor efforts should be embedded in power-sector reforms rather than developed in parallel.

[11]. ESMAP Formal Report 327/07.



IV. Regional

(January 2007–June 2008)

This section highlights the regional achievements of ESMAP in 2007 and early 2008, in keeping with the new emphasis on regional needs and operational priorities. Note, however, that the review in this chapter is intended to highlight regional issues rather than to describe comprehensively activities in each region.

Regional Highlights

Beginning with the 2005–2007 Business Plan, ESMAP has substantially modified the review and management of activity proposals. Under the new approach adopted in late 2006, regional activities supported by ESMAP now are prioritized and prepared by the regional operational units of the World Bank. They are then submitted to ESMAP for review and approval. This approach has led to several improvements, including:

- Regional activities proposed for ESMAP support are better coordinated and more reflective of regional priorities.
- ESMAP activities have a much bigger influence on operational World Bank programs.
- ESMAP-supported activities receive more management attention, because the performance of regional portfolios (in terms of disbursements, quality enhancement, and timely delivery of outputs) is a factor in the allocation of regional funding envelopes.

This section highlights the regional achievements of ESMAP in 2007 and early 2008, in keeping with the new emphasis on regional needs and operational priorities. Note, however, that the review in this chapter is intended to highlight regional issues rather than to describe comprehensively activities in each region.

Highlights

Africa

Sub-Saharan Africa faces major infrastructure challenges, the most severe of which are arguably those in the power sector. Not only is the region's energy infrastructure meager compared with other regions but electricity service is costly and unreliable. In recent years more than 30 of the 48 countries in the region have suffered acute energy crises. Rates of household electrification is proceeding more slowly than in other low-income countries, supply is inadequate, unreliable and costly. Concerted action is needed on three strategic priorities: (i) regional scaling-up of generation capacity use; (ii) improving the effectiveness and governance of utilities; and (iii) expanding access through sector-wide engagement. The three are interdependent and must be tackled together. The current ESMAP portfolio contains several activities consistent with these priorities, including efforts highlighted below to improve electricity distribution efficiency and to increase productive uses of electricity. ESMAP's Africa portfolio comprises 43 activities valued at US$6.4 million. Approximately 60 percent, valued at US$3.9 million, involve energy and poverty; about 12 percent, involving US$0.66; million, address energy security; and similar or somewhat lower levels of funding support market efficiency and renewable energy.

The ESMAP activity Action Plan for Energy Access Scale-Up in Africa is an umbrella activity with a number of major sub-activities. One has been to support outreach efforts on issues of energy security and investment by Africa's energy policymakers through the Forum of Energy Ministers in Africa (FEMA). Another is pre-feasibility work to identify transformative regional generation and transmission projects. Another is the ongoing activity to develop a sector-wide approach (SWAp) in Rwanda and other countries. The SWAp approach implies that it is government led, is underpinned by a policy and institutional reform program, has stretch targets for improved reliability, connectivity and supply, and has a fully costed and funded investment program. In this context, the project financed pilot projects on the use of Geographic Information Systems (GIS) tools for electrification planning in Kenya and Senegal. These activities have all produced results relevant to addressing the energy needs of Sub-Saharan Africa.

Under the Rural Electrification Activity in Guinea, funded by by the International Development Association (IDA), ESMAP currently funds and provides technical assistance for building the capacity of the Guinean Rural Electrification Office to support local entrepreneurs in preparing business plans and developing management information systems. ESMAP's technical assistance has mobilized 33 local, private entrepreneurs to invest in the development of small, decentralized electricity systems in isolated rural areas. The

Figure 4.1: ESMAP Activity P103456: Implementing the Action Plan for Energy Access Scale-Up, a Timeline of Key Events

Source: Africa Regional Energy Unit (AFTEG).

first entrepreneurial projects have been successfully operating for a year and, with support from their local communities and technical assistance from the Rural Electrification Office, they have demonstrated the commercial viability and sustainability of electrification efforts based on the Guinean business model.

During this past year, as precursor of new work on peri-urban energy, a report was completed on urban energy in Lagos, Nigeria. Lagos was one of the few cities where the World Bank piloted multisector efforts toward reducing urban poverty, including a household survey for which ESMAP offered invaluable and timely support. The survey

generated data that has led to a deeper understanding of consumer energy affordability, an understanding now being used by the IDA Energy Team to design Lagos' power distribution privatization scheme. The survey results will be a key factor for decisionmakers involved in energy service provision, including the private sector. The survey, to be repeated every three years under the Lagos Metropolitan Development and Governance Activity, will provide a credible household-level impact assessment of energy-sector interventions in Lagos. The survey is also being used in the AFR Infrastructure Country Diagnostic Study to assess Lagos' urban infrastructure situation and to compare it with that in three other large African cities.

Productive use of electricity is critical for rural electrification programs because it raises incomes and increases sales for service providers. To support productive electricity use in Sub-Saharan Africa, ESMAP is financing a study to better understand how best to promote such use in a typical electrification activity. The intention is to document productive-use approaches that go beyond the technical means of electricity delivery. The goal is to make it easier for poor people, specifically those involved in microenterprises, to improve their incomes, thereby making electricity more affordable to them. This ESMAP work is being implemented in partnership with the German Agency for Technical Cooperation (GTZ). GTZ finances country case studies in Uganda and Ghana, and ESMAP finances studies in Nigeria and South Africa. As a consequence, ESMAP's funding has been complemented by an equal or greater amount of resources from GTZ.

The Rural Lighting Initiative for Africa (RLIA) addresses a core element of one of the tracks of Pillar 1 of the Clean Investment Framework: meeting basic needs by equipping households with affordable, modern lighting. By 2030, the Initiative aims to offer modern, affordable, and reliable lighting services, sustainable over the long term, to 50 percent of those 500 million people in sub-Saharan Africa now without access to modern energy services. One of the important activities sponsored under this Initiative was a "Development Marketplace" for lighting solution entrepreneurs. More than 500 participants from countries in Asia, Africa, North and South America, Europe, and Australia took part in this first of a kind global business conference in Accra, Ghana, May 6–8, 2008, to focus on off-grid lighting in Africa. Highlights included the release of preliminary market research results on the market potential and lighting needs of African consumers and the establishment of strategic partnerships and business networking opportunities. Participants could also view the latest off-grid lighting innovations, showcased in booths at the industry trade fair and in the Development Marketplace. The Development Marketplace selected grant competition winners who will receive funding to implement projects offering affordable, clean, and safe off-grid lighting and promising improved lighting access for people living without electricity in countries such as Burkina Faso, Cameroon, Ghana, Kenya, Liberia, Namibia, Nigeria, Rwanda, and Tanzania. The list of winners can be viewed at the following internet address: http://lightingafrica.org/index.cfm?Page=DM.

Another activity supported by ESMAP is a study with the objective of formulating a modern biofuels strategy in Mozambique and Ethiopia. In addition, ESMAP has supported upstream work that has facilitated the preparation of household energy projects in a number of countries, such as Mali and Senegal, that tackle the safe and sustainable supply of cleaner biomass fuels.

EAST ASIA AND THE PACIFIC

East Asia and the Pacific

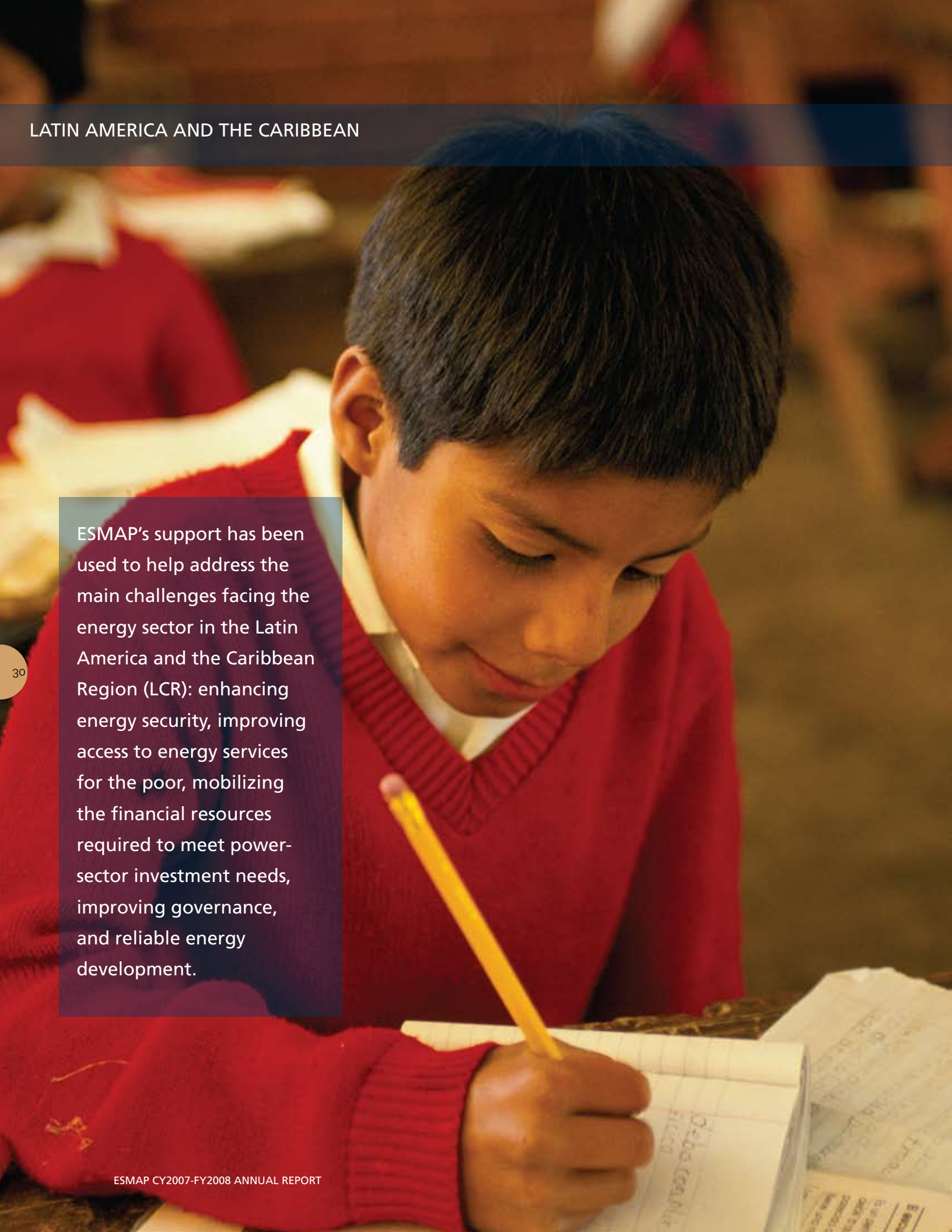
The rapid growth in the use of energy, especially electricity in the East Asia and the Pacific Region (EAP), have had implications for most of ESMAP's thematic areas, but most importantly for energy security and environmental concerns. In fact, the current EAP energy business strategy is quite well aligned with ESMAP's strategic goals. Of particular relevance, ESMAP has helped finance activities that have laid a solid foundation for World Bank policy dialogues and investments in the region. As exemplified by the accomplishments of tasks in 2007 and early 2008, ESMAP support has been critical for important energy operations and knowledge dissemination. In particular, ESMAP funding has been utilized for energy security and clean energy initiatives in China. These are central concerns because of the large potential opportunities for reduction of greenhouse gas emissions in China.

Several important tasks approved in 2006 are nearing completion. The first involves China's sustainable coal sector. As part of this work, a local EAP team completed background studies on the environmental damage and cost of coal mining in Shanxi Province, China, and an international firm completed a report on environmental management of coal mining activities. These studies have been combined into the report *Steps to a Modern, Safe, and Sustainable Coal Mining Sector in China* (soon to be published). This work will be of great assistance to the Government of China and to mining officials concerned with the latest ideas and best practices on environmental issues and sustainable coal mining.

Methane has been an issue for coal mining in China for many years, and it also is a significant contributor to greenhouse gases. With ESMAP support, this issue has been addressed in *A Strategy for Coal Bed Methane (CBM) and Coal Mine Methane (CMM) Development and Utilization in China* (ESMAP Formal Report 326/07). As a complement to this work, a China Coal Bed Methane Strategy was developed, and the Chinese version was discussed with the government. These projects also provided regional energy operations with opportunities to engage in discussions with government officials and coal mine managers and to work jointly on the possibility of new lending for carbon finance operations to reduce greenhouse gas emissions.

Energy efficiency is also a key component in reducing the growth of energy use in China, along with the accompanying adverse environmental impacts of such increased use. As a consequence, an ESMAP activity, termed China: Energy Efficiency Financing, complements other ongoing work in the region. Looking at China's most energy-intensive sectors, this project examines ways to improve energy efficiency through possible changes in policies, regulations, institutions, and technology use. To discuss these broad issues, a national workshop was held jointly by the government and the World Bank, with participation by senior provincial and central Chinese government officials, major Chinese policy agencies, commercial banks, and managers of energy-intensive industries. As a consequence of this work, background reports on the energy sector in the Shanxi and Shandong Provinces are providing the basis for a proposed World Bank energy efficiency financing activity.

China has thus far been the main focus of ESMAP regional grant funds, but that is changing. Other activities, either financed or proposed, include the EAP regional energy study: the Vietnam Gas Master Plan Review and the Philippines Rural Energy Market Reform activity. Although China will remain a key focus, it is anticipated that in the coming years, ESMAP will make grants supporting a greater diversity of activities in more countries.



ESMAP's support has been used to help address the main challenges facing the energy sector in the Latin America and the Caribbean Region (LCR): enhancing energy security, improving access to energy services for the poor, mobilizing the financial resources required to meet power-sector investment needs, improving governance, and reliable energy development.

Latin America and the Caribbean

ESMAP's LCR 2007 and early 2008 portfolio builds on its previous work on energy-sector strategies and energy trade and places an increasing focus on climate change. Included in the LCR Energy Strategy conducted during the year was an assessment of energy-sector reform. This assessment evaluated energy-sector reform from a variety of perspectives, including its achievements, difficulties, lessons learned, and current status. The LCR Energy Strategy also includes a review of energy-sector future issues, such as investment and financing requirements, constraints and challenges to be faced, and the development agencies' roles in helping to meet the region's energy needs. This study provides a solid basis for the formulation of a new World Bank energy strategy for the region. In addition, individual country studies in Ecuador, Honduras, and Uruguay made recommendations on short- and medium-term interventions needed to ensure the sustainability of quality energy services and to enhance the diversification of the energy supply. Following the Honduras sector strategy study, the World Bank is preparing an investment activity to improve the financial and operational efficiency of the country's energy utility.

ESMAP supported a pioneering study on benchmarking LCR electricity utilities. The results provide not only historical perspective but permit comparisons of power utility performance among the region's countries. The initial product of this study has been well received by the policymakers, utilities, and regulators, as well as by the Bank operational staff. As a result of this work, additional activities were launched in 2008 to explore further the social dimensions in the provision of electricity services and to identify nontraditional mechanisms for providing infrastructure services to the poor.

Climate change issues have become increasingly important in LCR. The main work in this area has been low-carbon studies conducted in Mexico and Brazil. The goals of these studies are twofold: first, to identify policies and programs for reducing greenhouse gas emissions that can best contribute to short- and long-term social and economic development; and second, to attract domestic and international financing for emission reduction activities through loans, grants, and credits. The studies have received significant support both internally at the World Bank (with more than US$1 million of Bank budget support) and externally from the host governments and other stakeholders in a cooperative manner (Given the extensive work to be done in the area, the governments have requested further studies to fill the remaining gaps. The final results of these studies will be available by the end of 2008).

Several other LCR studies address regional and global issues. A study in Mexico looks at electricity subsidies and their implications for the sector. A major study evaluating biodiesel was carried out in Brazil. Ongoing in Colombia is a study on Policy Options for Renewables. Finally, in Peru, the activity Overcoming Barriers to Hydropower Investment will help identify the main bottlenecks to the sustainable development of hydropower resources.

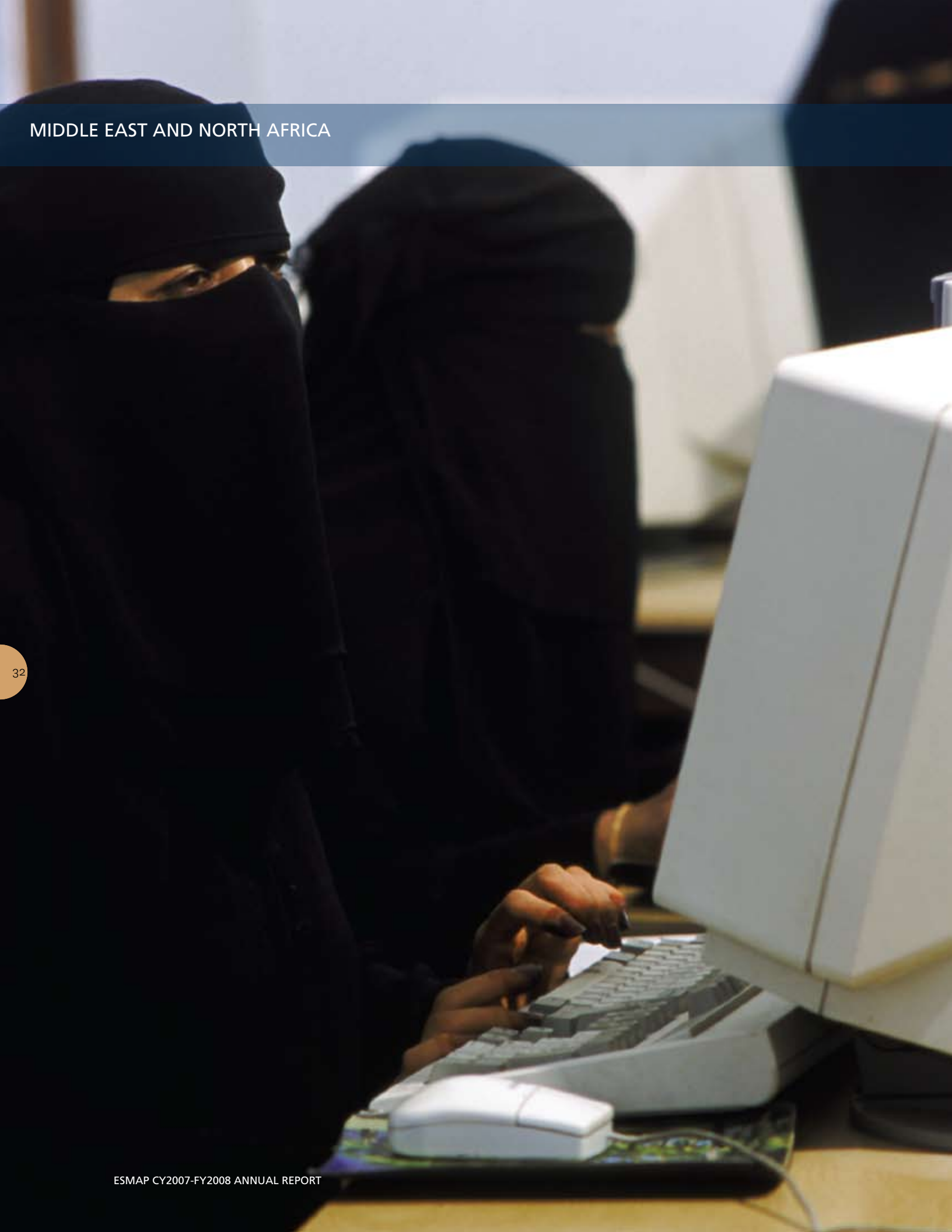
ESMAP continued to support the strengthening energy-service delivery of SMEs through grid-based and off-grid systems. In Bolivia and Nicaragua, where electricity coverage is low, the electrification challenge is enormous, requiring innovative business models and financing mechanisms to provide energy services for the large populations without electricity. In Bolivia, ESMAP funding is used to strengthen

solar home-system supply chains and to encourage the development of new markets for PV-Pico as part of the Bolivian government's pre-electrification effort. This is to be done by enhancing the capability of small-scale village-grid suppliers and cooperatives. In Peru, a technical assistance activity supported by ESMAP seeks to foster the participation of SMEs in the delivery of energy services.

The LCR region is also beginning to examine the problems involved in biomass energy use. Haiti's population is both one of the poorest in the region and the most heavily dependent on biomass fuels for household energy. Following ESMAP work commissioned to examine this issue, a small activity was devised promoting the use of energy-efficient stoves in rural households with the goals of improving energy services, alleviating indoor pollution and related health problems, and relieving pressure on the scarce biomass resource base.

Looking forward, the accumulated knowledge made possible by ESMAP work fostering innovation and investment in energy infrastructure service provision across the region contains many valuable lessons. Two specific examples stand out. Past work in Argentina examined household energy consumption patterns and ability to pay. Other work mapped the region's existing traditional and nontraditional mechanisms for providing infrastructure services to the poor. It is time to reflect on and learn from these and other activities and to generate insights that will be useful to policymakers, utilities, regulators, government officials, and other influential participants in the region's energy-related work.

MIDDLE EAST AND NORTH AFRICA



Middle East and North Africa

ESMAP plays a very significant role in addressing many of the challenges faced by the energy sector in the Middle East and North Africa Region (MNA). This support has generated significant results in the past few years as the regional allocation of ESMAP resources has increased and the World Bank—as a development partner—has become an increasingly important player. ESMAP support to MNA spans the four strategic themes, but it has been particularly prominent in the areas of energy security and renewable energy and energy efficiency. This has been prompted by high international oil prices, heavy subsidies on electricity tariffs, and the region's abundance of wind and solar resources. The region is diverse, with both energy-rich and energy-poor countries, but high international oil prices and high energy demand affect the entire region.

ESMAP support to MNA has resulted in some notable studies in Morocco, Egypt, Yemen, and the West Bank. In particular, energy issues in Morocco, a fuel-important country, align very well with ESMAP's main themes. ESMAP-supported work helped the Government of Morocco to design its reform program, including developing a subsidy framework for liquefied petroleum gas (LPG), a very commonly used household fuel. As of today, a second lending operation to support energy reforms is in the early stages of preparation. These recommended reform programs, based in part on work supported by ESMAP, proved useful for the new, incoming government as background for priority-setting and implementing new programs.

ESMAP support helped bring to completion the influential study, Egypt: Economic Cost of Gas. ESMAP responded to increased energy subsidies in Egypt and to pressures from international oil and gas companies for exploration and production activities by financing a study of this situation. The study estimated the economic value of gas to Egypt, which in turn resulted in natural gas price adjustments implemented October 1, 2007. These price increases will help generate greater and more cost-reflective gas revenues, which in turn will attract more investment into the sector and contribute to greater energy security in Egypt. Also in Egypt, ESMAP supported a Demand-Side Management workshop that brought together experts and utilities to learn how to implement such interventions when electricity prices are low. This is important because investment in the Egyptian electricity sector must investment needs to meet electricity demands are on the order of several billion U.S. dollars per year. As a consequence of ESMAP's work, the government was encouraged to design time-of-use tariffs targeting the industrial sector and load-management schemes with industrial users.

The West Bank and Gaza is one of MNA's most vulnerable clients. Compiled with ESMAP assistance, the West Bank-Gaza: Energy Sector Review has been essential in identifying short- and longer-term measures to improve operational and financial performance. Sound policies are needed to promote energy security, an increasingly important concern given the sustained conflict affecting the area. Also, problems with deteriorating electricity access and quality of supply have significant implications for economic and social welfare.

Yemen is one of the poorest countries in the region. Given the widespread poverty problems it faces, revenue and foreign exchange earnings from its natural gas resources—allocated transparently—can provide a significant boost to economic and social development. As a result, the ESMAP-supported study Yemen: Gas Incentive Framework[11] has contributed to the World Bank Group's continuing support for Yemen's natural gas and, more generally, its energy sectors.

Today, work supported by ESMAP continues to focus on renewable energy and energy efficiency. The context of this work, however, is gradually being reoriented toward climate change, general pricing issues, and subsidies, thus bringing it more in line with the Bank's Clean Energy Strategy and regional priorities.

SOUTH ASIA

South Asia

The South Asia Region (SAR) faces a variety of quite long-lasting and complex energy issues. The upward growth trajectory of South Asian countries, especially India, and the consequent rise in demand for energy, has revived interest in energy security, regional energy trade, climate change, energy efficiency, and demand-side management issues. Outside Africa, South Asia has the lowest rate of rural electrification in the world. In addition, the power sector in most countries, while growing rapidly, still lacks the capacity to provide quality electricity service to most of its large and small consumers. Finally, due to high costs or low access to modern energy sources, a large number of rural households in South Asia continue to rely on traditional forms of energy, such as straw, dung, and wood, for most of their household energy needs.

Cooperation between ESMAP and SAR has expanded during the last three years, mainly due to the flexibility of the new regional block grants. Last year ESMAP-supported studies addressed the issues of regional energy trade, energy security, and the development of the region's power sector. Regional and country specific studies have also examined energy efficiency issues. One such study was the *Bhutan Hydro Exports/Hydropower Sector Study: Issues & Options* (ESMAP Technical Paper 119/07). Another study focused on private renewable power generation for grid-connected renewable energy in Sri Lanka. Both studies have been completed and will be disseminated using ESMAP resources during this fiscal year. The Central Asia–South Asia Regional Energy Trade study involved cooperation with the ECA region and may have significant implications for future electricity trade in the region. Finally, methods for lowering carbon emissions in India have been addressed in studies on Strategies for Low Carbon Growth and on Best Practice of Coal-Fired Power Plant Rehabilitation—Energy Efficiency Improvements by O&M Practice Changes. Taken together, this work addresses many of the large-scale energy issues in South Asia.

South Asia also has had a long tradition of utilizing ESMAP support to deal with issues such as energy efficiency and energy poverty. A recent example is work on Pakistan in *Enhancing Access and Rural Electrification—Costs & Benefits, and Willingness to Pay* (publication in process). This innovative study utilized focus discussion groups to assess the benefits of rural electrification. As indicated in the section on Energy Poverty, a study on rural energy strategy in Bangladesh was recently completed. The report, *Bangladesh: Rural Energy Realities*, is being published as a Special ESMAP report and will be disseminated in the coming year. Work on improved stoves and their environmental benefits also progressed during the year, with completion of a study on indoor air pollution and a new technical assistance program, partially supported by ESMAP, in Bangladesh and a new forthcoming flagship publication for India, titled *Cleaner Hearths, Better Homes: Improved Stoves for India and the Developing World.* Recently, one of the first urban household energy surveys in Afghanistan was completed, providing useful results for the country's electricity planning.

Future work in South Asia will include a more diverse portfolio of projects covering themes relevant to the growing operational agenda in the subcontinent. Renewed focus will be placed on underrepresented countries in the ESMAP portfolio, such as Nepal, Bangladesh, Afghanistan, and Sri Lanka. Themes will range from energy efficiency to energy poverty in addition to energy security and rural electrification. Planned studies include enhancing energy efficiency in Afghanistan's government buildings; incorporating energy efficiency measures in the Nepal Electricity Authority (NEA); introducing cleaner, more energy-efficient technologies and practices in the brick-making sector in Bangladesh; and assessing the impacts of microhydro installations in Nepal. Poverty-related studies will be complemented by work on understanding barriers to hydropower development in Nepal, improving institutional capacity in electricity transmission in Maharashtra, and developing environmentally sustainable power sources in Sri Lanka. Finally, a series of workshops will disseminate past ESMAP work to ensure that the messages in these studies are widely shared with and feedback received from policymakers.

EUROPE AND CENTRAL ASIA

Europe and Central Asia

Regional energy operations and clean energy development are two key pillars of energy strategy in the Europe and Central Asia Region (ECA). Both lending and economic sector work have been growing vigorously in these areas. Under ECA's new infrastructure action plan, they will further grow in importance in the coming years. Most of the current ESMAP portfolio supports these thematic priorities. For instance, regional energy integration and accelerated development of renewable energy resources have received significant ESMAP support. Fortunately, ECA priorities coincide with ongoing work linked to ESMAP's thematic areas. Accelerating the shift to a low-carbon economy through use of renewable energy fits into the renewable energy theme, and facilitating the build up of regulatory capacity and supporting regional energy cooperation and security falls under market efficiency and governance.

One key area of work, the Southeast Europe Gasification Study, focuses on various aspects of increasing gas utilization. The study evaluates the economics of LNG and Caspian and Russian gas, as well as the viability of constructing a regional gas infrastructure. An energy poverty issue being assessed by this study is the economics of the gas distribution network development for households in key urban areas. This would allow customers, including low-income households, to switch to gas, a cleaner and often cheaper source of energy. The work has recently been extended to include gas storage—an important part of the regional gas market development agenda—to manage seasonal and daily demand swings for industrial, commercial, and residential customers as well as to enhance supply security. The study's findings feed directly into the regional gas investment activity envisaged by the World Bank.

By supporting the development agenda of the Central Asia–South Asia Regional Electricity Market Project (CASAREM), ESMAP has enabled the structuring of the Central Asia South Asia (CASA) 1000 Electricity Transmission Project, which in turn will enable the development of major generation projects, including export-oriented large hydroelectric projects. The CASA1000 Electricity Transmission Project is designed, in its first phase, to create the necessary infrastructure in Kyrgyz Republic and Tajikistan in Central Asia (the exporting countries) and Afghanistan and Pakistan in South Asia (the importing countries). In August 2008, the four governments entered into the Intergovernmental Agreement for the establishment of CASAREM and the realization of the CASA1000 project.

Energy efficiency and renewable energy have moved lately to the top of the energy agenda in most ECA countries. One reason for this is that, as part of European Union requirements, renewable energy must reach the goal of 20 percent of electricity generation by 2020. Other support for renewable energy and energy efficiency comes from concerns over environmental protection, climate change, public health, and energy security. Goals such as these are very ambitious, and the real question is how to reach them in an effective manner. There are many hurdles to the adoption of renewable energy in these countries, including lack of enabling policies and regulatory frameworks. Among the

countries facing significant challenges in meeting the 2020 renewable energy supply mix deadline are Slovakia and Bulgaria. ESMAP funding will be critical for assisting in the development of renewable energy and energy efficiency in these countries in the coming years. Key tasks will be the development of appropriate tariff and support schemes for renewable energy suppliers, creation of a green electricity certificate program, improvement of renewable energy regulations, and implementation of public awareness programs so consumers are fully aware of the reasons behind the switch to renewable energy sources. Another major challenge for sector regulators is the establishment of an appropriate regulatory framework for the introduction and widespread application of smart (or automated) energy metering to foster power-market competition and energy efficiency. The recently approved ESMAP grant for Hungary, with considerable cofinancing from the sector regulator, has a large potential for cross-country replication.

These are just some of the highlights of ESMAP support for ECA projects. Clearly, ECA countries have benefited from ESMAP's work promoting clean energy sources, such as gas, multicountry electricity trade, and, renewable energy and energy efficiency. ESMAP efforts generally support innovative work that will enhance the long-term energy future of the region.

V. Governance

(January 2007-June 2008)

Governance and Management

ESMAP is located in the Energy, Transport, and Water Department (ETWD) of the World Bank Group Sustainable Development Network (SDN) Vice Presidency. ESMAP reports to the Director of ETWD and is overseen by the Energy and Mining Sector Board. ESMAP is governed by a Consultative Group (CG) made up of representatives of contributing donors and chaired by the World Bank Vice President, Sustainable Development Network. The CG is common to all energy trust-funded programs (ETFPs) managed by the World Bank. A Technical Advisory Group (TAG) of three international experts selected by the CG provides independent advice. A program unit manages day-to-day ESMAP activities in accordance with the strategy and principles laid out in a business plan approved by the CG.

The Consultative Group

As provided by the ESMAP charter, membership in the Consultative Group (CG) is open to all contributing organizations without restrictions. Contributions can be either for core funding of ESMAP or for noncore thematic funding, where use is restricted to specific themes, activities, or regions (Table 5.1). ESMAP remains open to receiving contributions from official donors, International Financial Institutions (IFIs), official agencies, or private enterprises. The CG meets annually to review the strategic directions of ESMAP, its achievements, and its use of resources and funding requirements. The CG is responsible for:

- Defining ESMAP policies and strategies.
- Endorsing the business plan and financing plan.
- Reviewing ESMAP performance for the previous year.
- Overseeing TAG.

The Technical Advisory Group

The mission of the Technical Advisory Group (TAG) is to provide an informed, independent opinion to the CG of the ETFPs, which include ESMAP, about the purpose, strategic direction, and priorities of the ETFPs. In particular, the TAG provides advice and suggestions to the CG in the following areas:

- Current and emerging global issues in the energy sector that are likely to have an impact on growth and development in low- and middle-income countries.
- Strategy and overall priorities and their development into practical business plans, taking into account the volume of likely donor funding that can be secured for each trust-funded program in the context of the World Bank Group energy business strategy.
- Business plans for each of the ETFPs and their contributions to the implementation of the World Bank Group energy business strategy.
- Potential impact of each program and a high-level assessment of the actual impacts from implementation, especially on the World Bank Group energy business and on the programs and interests of the donors.
- Potential for the program to arrive at innovative ap proaches and new knowledge for improving energy service delivery in developing countries.
- Any other area, as requested by the chair of the CG.
- Review of the overall impact of implementing the ETFPs.

and Management

The ESMAP Unit

The ESMAP Unit is responsible for the day-to-day management of ESMAP, following the general strategy of its business plan and annual work program as approved by the director of ETWD and then by the CG.

The unit delegates the implementation of certain tasks to World Bank staff outside of ESMAP and relies on the support of external consultants and their expertise to deliver certain activities. Consultants and external services are procured following the Bank guidelines on procurement.

The key responsibilities of the ESMAP unit include:

- Delivering on ESMAP's annual work program and business plan.
- Preparing the annual work program and budget and the ESMAP business plan for review and approval by the CG.
- Reviewing proposals for ESMAP assistance.
- Providing support services to the CG and the TAG.
- Maintaining relationships and ensuring adequate reporting with donors and contributors.
- Maintaining relationships with external stakeholders, including recipient countries, civil society, academia, and the international energy practice.
- Maintaining relationships with the Energy and Mining Sector Board of the Bank and with the Bank energy staff.
- Managing the ESMAP human and financial resources in accordance with sound management principles and Bank standard practices.

Table 5.1: Donors and Members of the Consultative Group, Technical Advisory Group, and ESMAP Team

CONSULTATIVE GROUP

AUSTRALIA
AusAid

AUSTRIA
Ministry of Foreign Affairs
Austrian Development Agency

CANADA
Canadian International Development Agency

DENMARK
Royal Ministry of Foreign Affairs

FINLAND
Ministry of Foreign Affairs

FRANCE
Ministry of Foreign Affairs

GERMANY
Bundesministerium für Wirtschaftliche Zusammenarbeit und Entwicklung

ICELAND
Ministry for Foreign Affairs

NORWAY
Royal Ministry of Foreign Affairs

SWEDEN
Swedish International Development Cooperation Agency

THE NETHERLANDS
Ministry of Foreign Affairs

UNITED KINGDOM
Department for International Development

CO-SPONSORING ORGANIZATION

THE WORLD BANK GROUP

CHAIR OF THE CONSULTATIVE GROUP
Katherine Sierra
Jamal Saghir, Acting Chair

TECHNICAL ADVISORY GROUP

Andrew Barnett*
Elizabeth Cecelski
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Sheryl Silverman
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Jas Singh
Cindy Suh
Mohideen Wakeel
Nyra Wallace-Crawford
Christopher Walsh

REPRESENTATIVE FROM
SPONSORING ORGANIZATION

Jamal Saghir (The World Bank Group)

* Until March 31, 2007
** Until March 31, 2008

ESMAP Communications Strategy

Active in 6 regions with more than 170 projects, ESMAP relies on strategic, professionally managed communications to get the most impact from its ongoing activities. ESMAP's donors, client governments, and international partners work at the forefront of energy solutions to alleviate poverty around the world, work that is helping map the road toward a more sustainable and equitable energy future. The results of these projects are disseminated in a variety of forms, through several report types, workshops, symposia, and international conferences, all of which benefit from consultation with the ESMAP communications team. This consultation ensures that messages are appropriately framed to reach target audiences and that sometimes complex information is packaged in accessible language, thus increasing the impact and reach of ESMAP projects. Strategic communications also play a role internally, ensuring efficient cross-regional and cross-sector collaboration.

ESMAP Communications Products

The ESMAP Communications Team produces the following print and electronic products to disseminate to internal and external constituents the lessons learned from its activities:

- *Flagship Publications* are generally books or reports, produced to the highest quality standards, addressing the key global energy issues for today and the next decade.

- *Special Reports* cover high-interest topics and are prepared at the completion of ESMAP projects; they are thoroughly edited, peer-reviewed internally and externally, and widely disseminated.

- *Formal Reports*, the mainstay ESMAP publication, are prepared at the completion of ESMAP projects to communicate the work's findings to the general public. They are thoroughly edited and internally peer-reviewed.

- *Technical Papers*, also prepared at the completion of ESMAP projects, present technical information on the work targeted to small, very specialized audiences.

- *Workshop Proceedings* summarize ESMAP-sponsored workshops.

- *Activity Completion Reports* contain the results of ESMAP products and are geared toward the ESMAP and World Bank audience.

- *Knowledge Exchange Series* publications are glossy four-page notes summarizing topics of current interest to the energy sector; these may be based either on ESMAP activities or on other areas of high interest to the energy and development community.

- *ESMAP eNews*, an electronic newsletter, summarizes recent events in ESMAP and communicates information about new publications, workshops, and other activities.

- *www.esmap.org*, ESMAP's Web site, offers highlights of work in the thematic areas as well as a complete electronic inventory of ESMAP publications.

- The ESMAP *Annual Report* summarizes its financial and project highlights for the year.

2007 Reader Survey

As ESMAP continues to evolve, the types of publications and communications it produces for the general public are frequently reevaluated. ESMAP has always found ways to reach ever larger audiences with its wealth of energy expertise and publications. To further this effort, a survey of ESMAP publication readers was carried out in November 2007 to measure preferences among the types of knowledge products and to help tailor research to reach and serve interested audiences more effectively. The survey findings will help inform ESMAP's communication strategy for FY09 and beyond.

Following are some of the survey's key findings. The largest proportion of ESMAP readers are from the private sector, government, and academia. The majority of ESMAP readers have more than 10 years of experience in the energy sector. ESMAP's most popular communications products are its flagship publications, its technical papers, and its Web site (www.esmap.org). The thematic areas of greatest interest to readers of ESMAP communications were energy poverty, ranked first, followed closely by renewable energy. Survey respondents clearly preferred electronic communications for keeping informed about ESMAP's ongoing or new activities. Periodic e-mail communication ranked first, followed by the ESMAP e-newsletter and, of course, the Web site. As a consequence of this preference, ESMAP plans to keep abreast of trends in electronic communications to determine the most relevant means for informing its public about energy and development issues.

ESMAP's investment in electronic outreach has been yielding benefits that should increase in years to come. ESMAP has recently hired an experienced Web editor to oversee Web design and strategy to enhance further its electronic outreach. The communications team is focused on providing more interesting content on the Web site and on making the site more accessible to users. Improvements in the site's visual presentation of information will include use of interesting and compelling photographs and graphics.

Recent Developments, 2007-2008

The communications team has changed during the recent period. These changes have put ESMAP in a stronger position to promote key global and regional energy operation issues and to serve the energy and development community. To improve the quality of its communications, ESMAP recently hired a new Communications Officer, a Web editor, and a Publishing Associate.

VI. ESMAP
(January 2007–June 2008)

ESMAP Financial Review

Contributions Received

ESMAP received a total of US$13.3 million from its donors in FY08; receipts in FY07 were US$17.2 million. This year, 10 donors, including the World Bank, made cash transfers to ESMAP through trust funds. In addition to previous donors, ESMAP received support from two new donor countries, Australia and Austria, which are providing core (unrestricted) funding to the existing multidonor trust fund (MDTF). Table 6.1 and Figure 6.1 show actual receipts from individual donors for the period FY06–08.

Financial Review

Table 6.1: ESMAP Receipts, January 2007–June 2008 (US$000s)

Country	2006	2007	2008	Pledge for 2009	Total Receipts 06-08	%	Of which core 06-08	%
Australia	—	—	2,682	—	2,682	6.5%	2,682	14.5%
Austria (ADA;MoF)	—	—	658	219	658	1.6%	658	3.6%
Canada	—			465	—	0.0 %	—	0.0%
Denmark	2,455	—	1,962	1,956	4,417	10.8%	—	0.0%
Finland	205	—	—	—	205	0.5%	205	1.1%
France	467	860	1,052	972	2,380	5.8%	2,380	12.9%
Germany	3,408	1,771	2,805	4,959	7,984	19.4%	—	0.0%
Iceland	—	300	200	300	500	1.2%	500	2.7%
Netherlands	—	9,780	—	3,193	9,780	23.8%	9,780	53.0%
Norway	750	750	750	750	2,250	5.5%	1,125	6.1%
Sweden	1,551	—	1,589	—	3,140	7.6%	188	1.0%
United Kindom*	1,228	3,061	1,180	1,178	5,469	13.3%	948	5.1%
World Bank**	468	678	450	100	1,596	3.9%	—	0.0%
Grand Total	**10,531**	**17,200**	**13,329**	**14,093**	**41,061**	**100.0%**	**18,466**	**100.0%**

Source: Donor Administrative Agreement and the Systems, Applications, and Products (SAP).
*CEIF contribution to the Environment Unit of US$6.7 million (actual receipts and FY09 pledge) is not included.
** Does not include fee income.

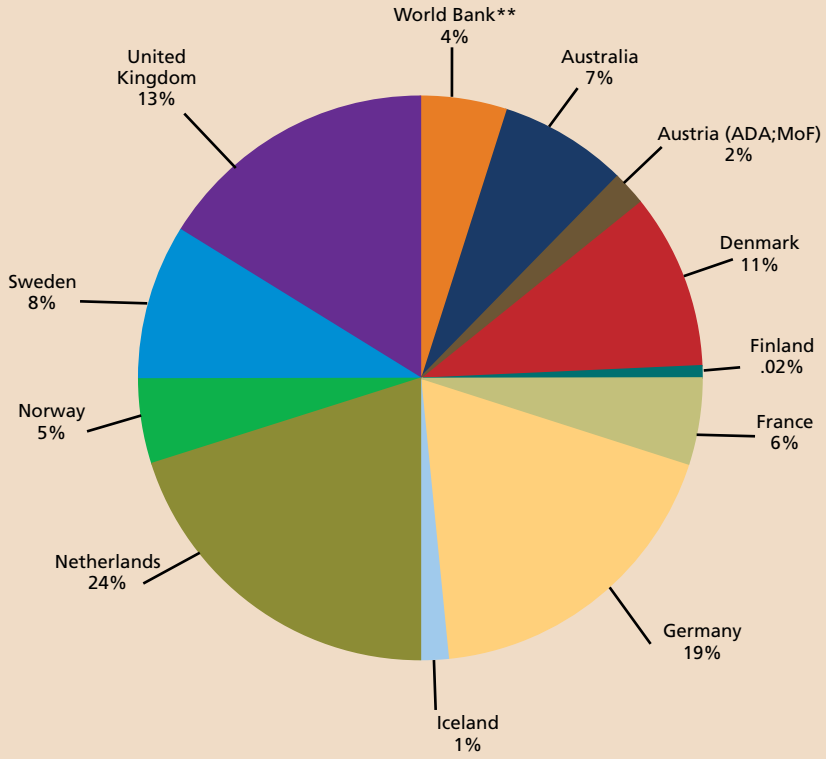
Core (Unrestricted) and Thematic Funding

Core contributions totaled US$5.1 in FY08 and accounted for 38 percent of total contributions. Australia, Austria, France, Iceland, the Netherlands, and Norway contributed to unrestricted funding (Table 6.2). The United Kingdom provided thematic funding (Clean Energy Investment Framework and SMEs). Thematic funding was also provided by Denmark (Renewable Energy) and Germany (Renewable Energy and Energy Efficiency). Sweden and Norway provided funding targeted to Africa. The World Bank provided US$0.45 million in FY08.

Core (Unrestricted) ESMAP Donor Contributions, FY06–08

As a percentage of total contributions, core (unrestricted) funding over the last three years has averaged 46 percent. Annual comparisons are difficult because of timing irregularities for some substantial contributions. After adjusting for this factor, however, the share of FY08 contributions that were unrestricted came to 52 percent, compared with 46 percent in FY06 and 58 percent in FY07.

Figure 6.1: ESMAP Receipts by Source



Source: Donor Administrative Agreement and SAP.
*** Does note include fee income.*

Table 6.2: Receipts by Type of Funding in FY08

TYPE OF FUNDING	AMOUNT (US$ million)
Core (Global unrestricted) (Australia, Austria, France, Iceland, Netherlands, Norway)	5.10
Thematic (RE/EE, CEIF) Denmark, Germany, United Kingdo m	5.90
Regional (Africa) (Norway, Sweden)	1.88
World Bank	0.45
Total	13.33

Source: Donor Administrative Agreement and SAP.

Disbursements

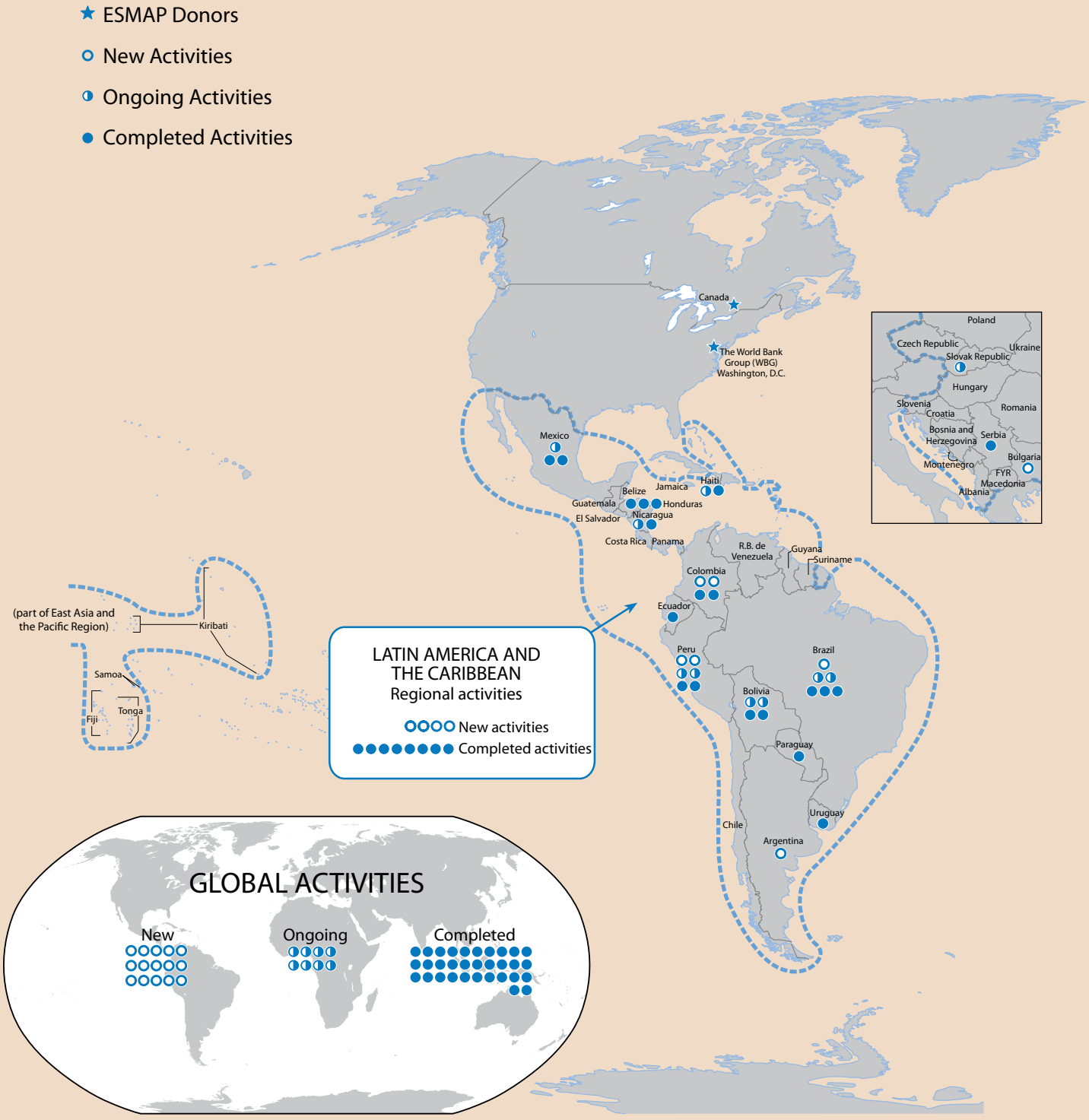
Disbursements in FY08 totaled US$12.4 million, an increase of US$1.8 million over FY07 (Table 6.3). Project expenditure increased by US$0.75 million; knowledge dissemination expenditure by US$0.4 million, reflecting the greater emphasis placed on this part of the business process; and program management costs increased by US$0.6 million.

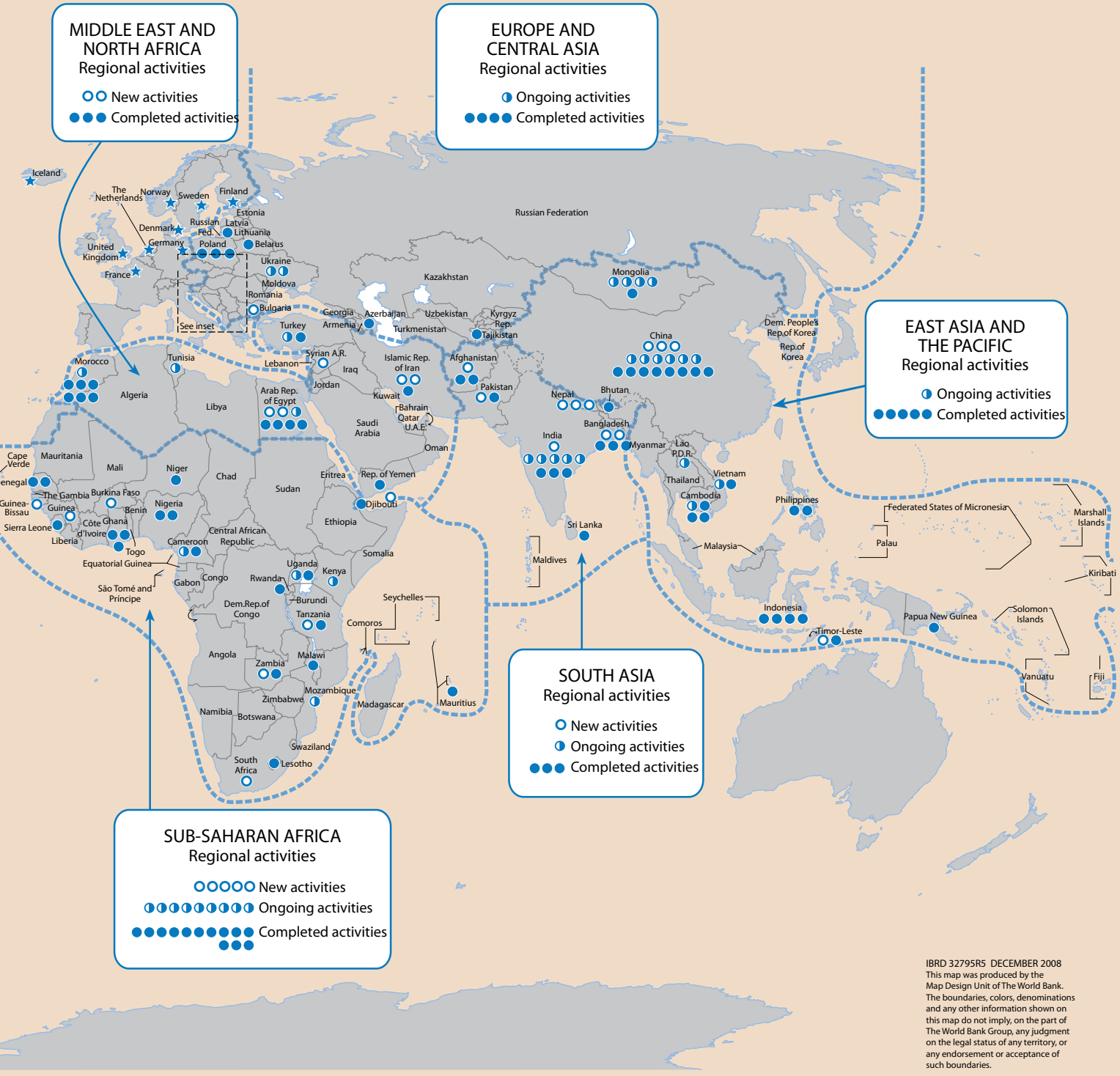
Table 6.3: ESMAP Disbursements and Expenditures (US$000s), January 2007–June 2008

	FY06		FY07		FY08	
Project Cost	**$7,445.12**	**89.6%**	**$9,151.82**	**85.7%**	**$9,907.37**	**79.8%**
Africa	776.44		819.85		2,003.16	
East Asia and the Pacific	1,528.45		1,472.70		938.34	
Europe and Central Asia	354.45		486.27		1,184.40	
Latin America and the Caribbean	957.57		1,692.28		1,282.83	
Middle East and North Africa	257.54		868.83		1,119.99	
South Asia	217.23		463.95		733.47	
Non-Regional VPUs	908.80		720.20		780.10	
ESMAP owned-managed	2,444.63		2,627.74		1,865.07	
Knowledge Dissemination	139.12	1.7%	430.95	4.0%	842.79	6.8%
Program Management & Administration *	723.80	8.7%	1,099.07	10.3%	1,667.31	13.4%
Total**	**$8,308.04**	**100.0%**	**$10,681.84**	**100.0%**	**$12,417.47**	**100.0%**
Of which:						
Funded by Donors	7,590.54		9,707.66		11,617.07	
Funded from the World Bank Budget	467.50		678.18		450.40	
Funded from Fee Income	250.00		296.00		350.00	

Source: World Bank Business Warehouse, 2008.
*The definition of *Program Management & Administration* has been broadened to include work program development, governance, activity supervision, internal staff training, and administrative support.
** Does not include disbursement by the Environment Unit.

ESMAP in the World, CY2007–FY2008





IBRD 32795R5 DECEMBER 2008

ANNEX 1

Berlin, March 8–9, 2007

The Consultative Group (CG) for the Energy Trust-Funded Programs (ETFPs) managed by the World Bank met in Berlin, Germany, March 8–9, 2007. Mr. Jamal Saghir, Director for Energy, Transport, and Water in the Sustainable Development Vice Presidency and Chair of the World Bank's Energy and Mining Sector Board, chaired the meeting. This document presents a summary of the meeting's proceedings.

Proceedings from the Consultative Group Meeting of the World Bank Group Energy Trust-Funded Programs, ESMAP and ASTAE, During Calendar Year 2007 and Fiscal Year January Through June 2008

Welcoming all participants, Mr. Saghir outlined the agenda for the meeting. The first day, open to CG members and observers, included a wide range of presentations relating to the Clean Energy Investment Framework (CEIF). The second day, with participation limited to active donors, focused on a review of the implementation activities of ESMAP and the Asia Sustainable and Alternative Energy Program (ASTAE) during 2006 and on the review by the Technical Advisory Committee (TAG) of findings on the ETFPs.

The meeting opened with welcoming remarks by co-host Mr. Konukiewitz, Deputy General Director, Federal Ministry for Economic Cooperation and Development (BMZ), Germany. Mr. Saghir made a brief presentation on the three pillars of the CEIF, and in particular its pillars on energy access scale-up for Sub-Saharan Africa and clean energy and climate change. Mr. Konukiewitz welcomed all participants and reviewed the discussions on the Africa–EU Energy Partnership Forum, which had been held prior to the CG meeting, and the focus on renewable energy by German development agencies.

The floor was then opened to share perspectives on the forum and general energy and development issues. Mr. Saghir opened the discussion with an overview of World Bank and ESMAP roles in supporting energy investments and policies in developing countries, from the 1980s to the most recent focus on clean energy, energy security, and access. Special emphasis was given to the distinction between the energy needs for large growing economies, such as China and India, and those of Sub-Saharan Africa. The challenges of scaling up renewable energy and energy efficiency in this context were discussed. Other participants raised the particular problems of energy access in rural areas, emphasizing that needs and solutions may not be the same for rural as for urban areas.

Africa Energy Access Scale-Up Plan. Mr. Vijay Iyer (Energy Sector Manager, Africa Region, World Bank) described the five tracks of the energy access scale-up plan, focused on providing energy for basic household needs, for achievement of the MDGs, and for economic growth. The presentation reviewed the proposed approach to harmonizing support at the country level for effective planning and implementation. The key role of partnerships in this process and their demands on developing country ownership and donor commitment were discussed. Mr. Iyer outlined the issues and instruments for achieving these conditions. The presentation concluded with actions being taken by the World Bank and the Federal Ministry for Economic Cooperation and Development (BMZ) meeting to be held in Maputo at the end of March 2007. While agreeing on the importance of the energy-access agenda, the discussion identified the critical need to work with host countries in developing this plan and for donors to act in harmony in its delivery.

Lighting Africa: *Catalyzing Markets for Modern Lighting.* Mr. Anil Cabraal (Lead Energy Specialist, World Bank) and Mr. Russel Sturm (Sustainable Energy Team Leader, IFC) discussed this proposed program to provide modern lighting products to Sub-Saharan Africa households. The presentation explained the difficulties of rapidly expanding the energy grid and the urgent need for different mechanisms and products to provide lighting. Fuel-based lighting is common, although it is the most expensive and a very ineffective form of lighting. Emerging lighting technologies might hold the key to finally lighting Africa. The World Bank Group, including both the IFC and IDA, are developing an initiative, with ESMAP support, to work with the private industry to develop an affordable market of lighting services for the

poor. The goal of the initiative is to rapidly scale up access to clean, reliable, and affordable lighting and basic energy services for 250 million people across Africa by 2030. This program is based on two basic premises: (i) lighting services to the poor are profitable if products are priced accordingly; and (ii) success requires a new business paradigm.

An Update on the Global Village Energy Partnership. Ms. Sarah Adams (acting CEO, GVEP International) presented an update on the existing and planned support to the partnership by Sweden, the Netherlands, DFID, and Russia through ESMAP and by the DFID and the Netherlands directly. This presentation was an update to last year's presentation, after which donors asked GVEP to review and revamp its business model and to provide a transition strategy. The new business model includes a focus on making financial and technical assistance services available to SMEs providing energy services to the poor, in close coordination with country energy policies and partnerships. The governance structure of GVEP has been reviewed and streamlined. The main donor supporters of GVEP confirmed their commitment to the program and the need for GVEP International to move forward with its institutional strengthening, on-the-ground program design and implementation, and legal and program documentation.

CEIF Pillars 2 and 3. Mr. Ede Ijjasz (Manager, ESMAP) reviewed the development of the CEIF and the salient features of the CEIF Action Plan recently prepared by the World Bank for discussion by the Board of Directors. The presentation then focused on Pillar 2 (accelerating the transition to a low-carbon economy) and Pillar 3 (adaptation to climate change), as Pillar 1 had been discussed earlier in the day. For Pillar 2, the strategy is to support, on demand from client countries, the development and financing of country low-carbon energy strategies for diversification of energy sources to encompass a wider menu of lower-carbon alternatives; the promotion of efficient energy use; and the assurance of an energy platform that supports growth and poverty alleviation. The objectives of the action plan for Pillar 3 are to understand the nature and degree of the risks of climate change, to build capacity to manage those risks, and to invest in adaptive measures to minimize and mitigate risks.

Berlin, Friday, March 9: ETFP Business Meeting

After brief introductory remarks by Mr. Saghir, the second day of the CG meeting started with presentations and discussion on business issues of the ETFPs.

Donor Perspectives on ETFPs. Mr. Morton Svelle (Policy Director, The Norwegian Agency for Development Cooperation (NORAD) presented Norway's new initiative on renewable energy and its linkage to the ETFPs. The initiative supports economic energy development, with emphasis on renewable energy, increased private-sector investments, and increased cooperation with the relevant Norwegian institutions. The ETFPs are seen as instruments with particular competencies and with complementarities to bilateral cooperation, UN agencies, and the World Bank Group. Ms. Audbjorg Halldorsdottir (Counselor, Ministry of Foreign Affairs, Iceland) presented the perspectives from a smaller donor on the leverage obtained in participating in the ETFPs, given their increased cooperation in the field of sustainable use of natural resources with a specific focus on renewable energy; strengthened collaborations with international institutions in the field of renewable energy; and increased emphasis on development cooperation with small island development states.

TAG: 2006 Report on the ETFPs. Mr. Andrew Barnett, TAG moderator, led the discussion on the 2006 review of the ETFPs. The presentation reviewed positive areas in the 2006 work program of ESMAP, including the effective support in the preparation of the Africa Energy Access Scale-Up Plan; the implementation of the regional block grants; improved communications; and the technical leadership by the thematic leaders in the ESMAP core team. The TAG highlighted areas for continued management attention, such as the GVEP and SME program, energy gender, and household energy. The TAG also summarized the analysis of ASTAE in very positive terms, given the impact on energy programs in East Asia. Overall, the TAG emphasized that the group was very satisfied with the performance of the ETFPs in 2006.

The donors provided several comments on the TAG report, including: (i) the suggestion to invite the EU as an observer to the next CG meeting and the possibility of expanding interaction with other donors, such as Switzerland and the United States; (ii) the need for the TAG to include clients' perspectives as part of their review in 2007; and (iii) the desire of donors to learn as early as possible about new activities to be supported by ESMAP to enhance opportunities to interact and potentially coordinate their country and regional activities.

The CG members agreed to have in the minutes of the meeting a mention of appreciation to Mr. Andrew Barnett, who informed the meeting about his desire to step down as TAG moderator after 10 years on the team. The CG members highly appreciate Mr. Barnett's leadership role during his tenure as TAG moderator. It was agreed that for the selection of the next TAG member, three candidates would be selected by a committee of CG members. The proposed candidates would be interviewed and the final selection completed, in accordance with World Bank Group

guidelines for selection of consultants, with a target date of June 2007. The United Kingdom, the Netherlands, and Denmark agreed to be part of this committee.

ESMAP: 2006 Implementation Report. Mr. Ede Ijjasz (Manager, ESMAP) presented ESMAP's implementation report following the four thematic areas of the 2005–2007 Business Plan: (i) energy security (including energy efficiency); (ii) renewable energy; (iii) energy poverty (including energy gender); and (iv) governance and market efficiency. The presentation for each theme focused on results and outcomes of ESMAP activities, with emphasis on operational leveraging, think-tank activities, and knowledge generation and management. Mr. Ijjasz then presented the advances in ESMAP's communications functions, including new products and the revamped Web site. The financial review illustrated donors' increased support of ESMAP, the regional distribution of resources with special emphasis on Africa, and the thematic distribution of resources. Mr. Ijjasz presented a report on progress made in implementing the ESMAP-WSP efficiency measures. The presentation concluded with a description of the process for preparing the 2008–2010 Business Plan, the continued support to the CEIF, and the implementation of TAG recommendations. Donor comments reiterated the themes discussed after the TAG presentation, including the need for increased focus on energy gender, communications with donors, and distribution of regional block grant activities when identified. Discussions also highlighted the need for ESMAP to continue to strike a balance between its think-tank function and its operational leveraging function, as the global energy challenges call for expanded analytical work.

Addressing the Growing Sustainable Energy Challenge in Asia with ASTAE. Ms. Junhui Wu (Energy and Transport Sector Manager, East Asia and the Pacific Region, the World Bank Group) explained the growing challenges and shifting paradigms in clean energy and climate change, as well as climate change adaptation in the East Asia and the Pacific Region. The presentation illustrated the achievements of ASTAE in 2006, particularly in terms of influencing World Bank Group operations and achieving results on the ground in accord with its mandate. Ms. Wu also outlined the new business plan for 2007–9, which included a further concentration of downstream sustainable energy and access activities and an expansion of staff in the field to cover more countries and operations.

The donors supporting ASTAE confirmed their desire for the TAG to continue conducting its performance review functions. The meeting discussed the need for continued interaction and leverage of ASTAE and ESMAP to achieve both programs' objectives in the East Asia and the Pacific Region.

The Impact of ESMAP in Africa. Mr. Vijay Iyer (Manager, Energy, Africa, World Bank Group) summarized ESMAP-supported activities in Sub-Saharan Africa being implemented by the regional operational unit under the regional block grant. The presentation highlighted that the Africa Region energy portfolio covers all the relevant ESMAP thematic areas. The 2007 portfolio is evolving in response to the clients' and overall energy-sector needs. Emerging areas of importance for Africa include: (a) collaborating on large and small hydropower programs; (b) conducting wind and renewable energy resource mapping; (c) enhancing Africa's capacity on think-tank functions; and (d) responding rapidly to emerging needs in client countries. ESMAP intends to strengthen its capacity in household energy/biomass to ensure adequate attention to these topics.

Other Business. The donors discussed new pledges to ESMAP by current contributors and by potential new donors. The meeting also put forward suggestions for next year's CG, including maintaining the same two-day format but with a smaller number of presentations and more time for strategic discussions and exchange of information by participants. The CG meeting in 2008 will be hosted by the World Bank Group.

Washington, DC, February 18, 2008

The Consultative Group (CG) for the Energy Trust-Funded Programs (ETFPs), managed by the World Bank Group, met in Washington, DC, on February 18, 2008. Mr. Jamal Saghir, Director for Energy, Transport and Water and Chair of the World Bank Group Energy and Mining Sector Board, chaired the meeting.

Welcoming all participants, Mr. Jamal Saghir outlined the agenda for the meeting. The 2008 CG meeting included 6 sessions focusing on World Bank perspectives in the energy sector, the Technical Advisory Group (TAG) report on the ETFPs, the ESMAP and ASTAE annual implementation reports, regional perspectives on Africa, the ESMAP business plan, and a closing session. The CG meeting was linked to the World Bank Group Sustainable Development Week, which included specific Energy Day events and celebration of ESMAP's twenty-fifth anniversary. The week concluded with a brainstorming session that provided a platform for CG members to exchange views on Energy Day, a presentation on the Africa energy program of the World Bank Group, and an update from GVEP International.

The meeting opened with welcoming remarks from the CG Chair, Mr. Saghir, who also made a presentation on the World Bank Group Perspectives on Energy for Development. This presentation focused on the energy crisis in Africa, the linkage between climate change and energy and energy-consuming sectors, and the shift towards sustainable

infrastructure, in the context of emerging global challenges, such as rising energy prices and urbanization. In addition, the presentation included an update on the Clean Energy Investment Framework (CEIF) and the World Bank Group's new Strategic Framework on Climate Change (SFCC). The presentation also highlighted the importance of the transport–energy–climate change nexus, and the need for acceleration of clean energy technologies.

CG members exchanged views on the general issues of energy, development, and climate change and their linkages to ESMAP's future agenda. While the donor members generally agreed that climate change should figure in ESMAP's agenda, particularly in the context of adaptation, some expressed concern that this may overshadow other priority issues such as the energy-access gap and poverty reduction. Mr. Saghir emphasized the importance of maintaining a clear focus on the energy access/poverty alleviation agenda while working in parallel on the energy–climate change agenda, as access to energy services will not be sustained if climate change issues are not addressed.

TAG Assessments of ETFPs to CG. Mr. Amitav Rath, TAG moderator, led the discussion on the 2007 review of the ETFPs and presented the TAG report to the CG. The presentation reviewed positive areas in ESMAP's 2007 work program, including the marked improvement in the quality and dissemination of publications, the success of regional block grants, and the technical leadership shown by the ESMAP core team's thematic leaders. Issues highlighted included the need to continue enhancing ESMAP's M&E system and expanding its work on gender. The presentation also highlighted the need to finalize some elements of the past business plan, such as the energy access portfolio review, periurban energy, and cooking energy. In addition, the TAG presented its findings from country visits to evaluate the impacts of ESMAP's activities in Mali, Senegal, and Thailand. Overall, the TAG emphasized its great satisfaction with the ETFPs' performance in 2007.

The donors welcomed the positive assessment by TAG and generally agreed with their recommendations. The CG members agreed on the good performance of TAG and the quality of its reports, although their length and executive summaries were highlighted as areas for improvement. The TAG members agreed to meet with CG members during the Sustainable Development Week to further understand their expectations.

Implementation Report on ESMAP. Mr. Ede Ijjasz (Manager, ESMAP) presented ESMAP's implementation report for 2007 following the four thematic areas of the business plan: (i) energy poverty (including gender and SMEs); (ii) energy security (including energy efficiency); (iii) renewable energy; and (iv) energy markets and governance. The presentation discussed some of the results of activities supported by ESMAP, including the dedicated focus on enhancing energy access in Africa and rural areas, partly through SMEs and increased concentration on biomass energy and gender; the importance of regional integration in promoting energy security; and the scaling up of the energy efficiency agenda; among others. Mr. Ijjasz then presented the advances in ESMAP's communications functions, including the translation of key publications into other languages for wider reach. The financial review illustrated donors' increased support of ESMAP and the growth of core funding since 2005, which has been critical for the program's effective functioning.

The donors were pleased with ESMAP's accomplishments in 2007, particularly the increasing focus on gender and Africa. The discussions also highlighted the need for ESMAP to enhance its monitoring and evaluation of projects to show outcomes and impacts on the ground, as well as, to improve ESMAP's visibility. Comments were made regarding the linkage between renewable energy and energy poverty, as well as expressing strong interest in the SME program, particularly in promoting energy access. The issue of partnerships, for example with WHO on energy-health linkages, was raised. One CG member highlighted the need for increased coordination with the EU in further developing and implementing the CEIF, given the recent adoption of the Africa-Europe Energy Partnership. There was strong support to provide even more emphasis on Africa.

Implementation Report on ASTAE. Ms. Junhui Wu (Energy and Transport Sector Manager, East Asia and the Pacific Region, the World Bank Group) presented the implementation report on ASTAE. The presentation illustrated ASTAE's achievements in 2007, particularly in terms of influencing World Bank Group operations and achieving results on the ground in accord with its mandate. Ms. Wu also outlined ASTAE's new business plan going forward, which included further concentration on downstream sustainable energy and access activities and an expansion of staff in the field to cover more countries and operations. The presentation ended with an update on ASTAE's funding status. It was recommended that ASTAE increase dissemination of the lessons and successes of its projects. It was confirmed that ASTAE can continue its support of activities in China. The CG and ASTAE donors confirmed that TAG will continue to include ASTAE as part of its review functions. The ASTAE donors, TAG, and the ASTAE program agreed to meet to review the terms of engagement and prepare a follow-up note.

Regional Energy Integration in Africa. Mr. Amarquaye Armar Lead Energy Specialist, Energy Anchor) delivered a presentation on regional energy integration and energy security in Sub-Saharan Africa. Mr. Armar discussed the

need to reduce vulnerability to energy-supply disruptions in Africa and to provide funds to close the "performance gap." Regional, bilateral, and multilateral partnerships were identified as crucial to achieving this goal by facilitating cross-border energy integration. Mr. Armar presented the West Africa Power Pool (WAPP) as an example of a successful regional partnership that could be emulated across the continent.

ESMAP Annotated Outline of New Business Plan. Mr. Ede Ijjasz (Manager, ESMAP) presented ESMAP's annotated outline of its new business plan (BP), which was well received as a good first step by the CG members, who appreciated the participatory approach to preparing the BP. Some donors agreed with the matrix structure of the business plan, including the four pillars of energy for growth, energy for MDGs, climate change, and energy security, as well as the cross-cutting focal areas of renewables, energy efficiency, household energy, gender, PPPs and SMEs, and technology. Other participants were of the opinion that climate change could also be seen as a cross-cutting area in the context of ESMAP's mission. In the discussion, it was requested to clarify in the business plan ESMAP's possible role, if any, in accelerating development and commercialization of clean energy technologies.

It was reiterated that ESMAP shall keep access and Africa the priorities of business. CG members expressed their interest in the rapid finalization of the business plan. Suggestions included leaving some flexibility in the business plan, laying out partnership and M&E implementation plans, and discussing organizational and staffing issues. The need for stronger linkages with IFC and for support to bilateral programs was mentioned. One of the donor members referred to ESMAP's mission and pointed to the limitations in funding opportunities, for example regarding renewable energy. It was proposed and agreed that the business plan period will be extended to cover five years: 2008 to 2013. It was agreed that CG members could still submit written comments until March 15, 2008. Several donors welcomed the suggestion of an extraordinary and informal CG meeting for discussion of a revised draft of the business plan later in 2008. One donor suggested organizing this back to back with a meeting of the Advisory Group of the EU Energy Initiative (EUEI). ESMAP agreed to consider this proposal.

Reporting Cycle. It was agreed that ESMAP and ASTAE will report to donors and produce annual reports on a July to June cycle, replacing the past practice of reporting on a calendar-year basis. This will allow alignment with the World Bank Group fiscal year cycle and facilitate reporting to the CG. However, the CG meeting will maintain the tradition of holding its annual meetings in spring of the calendar year, to combine, when appropriate, with the World Bank Group Energy Week.

Other Business. The donors discussed new pledges to ESMAP. During the closed session, Mr. Saghir informed the CG members of the departure of Mr. Ede Ijjasz as Manager of ESMAP to take up the position of Sustainable Development Manager for the China and Mongolia department of the World Bank Group. Mr. Saghir described the competitive selection process for the new Program Manager and invited CG members to participate in the short-listing and interview committees.

Closing Session. At the end of the Sustainable Development Week, the CG members met for an open exchange of views on the week's events. Mr. Vijay Iyer, Sector Manager for the Africa regional energy operational unit, presented the work program and achievements of the Africa energy team. Sarah Adams, CEO of GVEP International, presented an update on their work program.

ANNEX 2

New, Ongoing and Completed Activities During Calendar Year 2007 and Fiscal Year January Through June 2008, by Region

NEW ACTIVITIES

ACTIVITY	COUNTRY/REGION	TASK MANAGER
AFRICA		
Fragile States Support Facility	Regional	Malcolm Cosgrove-Davies
Implementation of Priority G&T Projects	Regional	Robert Schlotterer
Electrification Experiences in Africa	Regional	Dana Rysankova
Electricity Utility Support Facility (Benchmarking and TA support	Regional	Prasad Tallapragada
Capacity Building among Small-Scale Off-Grid Energy Suppliers	Burkina Faso	Koffi Ekouevi
Scaling up SME Participation in Rural Electrification in Guinea	Guinea	Dana Rysankova
Fragile States in West Africa: Towards an Integrated Strategy for Electricity	Guinea-Bissau	Fanny Missfeldt-Ringius
Regulating Electricity Exports and Imports in SADC Countries: Roles for National Regulators	Regional	Wendy Hughes
South Africa Low Carbon	South Africa	Xiaodong Wang
Integrating SMEs in Tanzania's Rural Energy Initiatives	Tanzania	Dana Rysankova
Strengthening Small-Scale Offgrid Energy Suppliers	Zambia	Xiaodong Wang
Sub-Saharan Africa Refinery Sector Development	Regional	Eleodoro O. Mayorga Alba
East Asia and the Pacific		
China Low Carbon	China	Ranjit Lamech
Urban Transport	China	Shomik Raj Mehndiratta
Survey & Knowledge Sharing on Energy Conservation	China	Robert P. Taylor
Assessing Potential for Windfarm Development	Timor Leste	Frederic Asseline
Europe and Central Asia		
Building Up Regulatory Capacity for Renewable Energy Sources	Bulgaria	Istvan Dobozi
Global		
Economics of Connecting the Poor to Gas	Global	Franz Gerner
Impact of Rural Electrification on Development	Global	Shahidur R. Khandker
Global Energy Assessment background energy papers	Global	Amarquaye Armar
Public Procurement of Energy Efficiency	Global	Jas Singh
Preparation of Clean Energy Technology	Global	Gary Stuggins
Risk in Power Systems Planning	Global	Soren Krohn
Accelerating Clean Energy Tech (Phase II)	Global	Jonathan Coony
Grid Connected Renewable Energy Policy Reform	Global	Soren Krohn

NEW ACTIVITIES

ACTIVITY	COUNTRY/REGION	TASK MANAGER
Global continued		
Dissemination of Findings of Work on Communities Impacted by Coal	Global	John E. Strongman
Accelerating New Clean Energy Technology	Global	Jonathan Coony
Scaling Up Demand Side Energy Efficiency Improvements through Opportunities Under Programmatic CDM	Global	Ashok Sarkar
ESMAP: World Forum on Energy Regulation	Global	R. Anil Cabraal
Roundtable on & Bridging the Energy Efficiency Divide: Implementation Models and Best Practices	Global	Ashok Sarkar
Study on Equipment Prices in the Energy Sector	Global	Dirk Pauschert
Latin America and the Caribbean		
A Social Policy Framework for Electricity Service in Argentina	Argentina	Luis Alberto Andres
Construction of GHG Abatement Cost Curves for Brazil	Brazil	Christophe de Gouvello
Policy Options for Renewables	Colombia	Walter Vergara
Alternative Energy and Bioenergy	Colombia	Todd M. Johnson
Identifying Traditional and Non-Traditional Mechanisms for Reaching the Poor in Infrastructure Services	Regional	Luis Alberto Andres
Benchmarking Analysis of Electricity Distribution Center	Regional	Luis Alberto Andres
Assessment and Quantification of the Impact of Global Warming in the Power Sector of Peru	Peru	Walter Vergara
Overcoming Barriers to Hydropower Investment in Peru	Peru	Susan V. Bogach
Middle East and North Africa		
Egypt Energy Pricing Study	Egypt	Anna Bjerde
Egypt Commercial Wind Development Framework	Egypt	Anna Bjerde
Iran Pricing and Reform	Iran	Vladislav Vucetic
Iran Renewable Energy	Iran	Vladislav Vucetic
MNA Regional Energy Efficiency Study	Regional	Alexander Kremer
Ministerial Roundtable on Regional Sustainable Energy in North Africa	Regional	Pierre Audinet
Syrian Electricity Sector Strategy	Syria	Anna Bjerde
South Asia		
Study on Energy Savings Opportunities in Large Buildings	Afghanistan	Abdul Wali Ibrahimi
The Poverty Impact of Rural Electrification: Evidence from Bangladesh	Bangladesh	Raihan Elahi
Introducing Energy-efficient & Cleaner Technologies and Practices in the Brick-making Sector in Bangladesh	Bangladesh	Sameer Akbar
Capacity Building Initiatives for Maharashtra State Electricity Transmission Company Ltd.	India	Ashish Khanna
Assessing the Social Impacts of Rural Energy Services	Nepal	Sudeshna Ghosh and Mudassar Imran
Energy efficiency	Nepal	Jeremy Levin
Removing Obstacles to Nepal's Hydropower Development	Nepal	Judith Plummer and Mudassar Imran
Support for the Development of a Large-Scale Energy Efficiency	Pakistan	Ashok Sarkar
Dissemination Package	Regional	Julia Fraser, Waqar Haider, Pedro Sanchez, and Mudassar Imran

ONGOING ACTIVITIES

ACTIVITY	COUNTRY/REGION	TASK MANAGER
Africa		
Utility Performance	Regional	Prasad Tallapragada
Petroleum Access (Part I) (FY06/Oil Security and Logistics Study for Rwanda and Uganda	Regional	Paivi Koljonen
Indicative Generation & Transmission Expansion	Regional	Samuel A. O'Brien-Kumi
Power SIL 4	Uganda	Fanny Missfeldt-Ringius
Modern Biofuels Assessment	Mozambique	Boris Enrique Utria
Outreach on Africa Energy Access	Regional	Kyran O'Sullivan
ESMAP Productive Uses of Electricity	Regional	Mohua Mukherjee
Lighting Africa - Program Management	Regional	R. Anil Cabraal
Efficiency Study of Downstream Petroleum Markets in Sub-Saharan Africa	Regional	Mourad Belguedj
Lighting Africa - Development Market	Regional	R. Anil Cabraal
Lighting Africa - Part V: Web	Regional	R. Anil Cabraal
Capacity Building among Small-Scale Off-Grid Energy Suppliers	Cameroon	Koffi Ekouevi
Decentralized Energy Services - Cameroon	Cameroon	Marlon Lezama
Decentralized Energy Services - Kenya	Kenya	Marlon Lezama
East Asia and the Pacific		
China Sustainable Coal Sector Development	China	Jianping Zhao
Municipal Heating Reform and Regulation	China	Gailius J. Draugelis
Rural Energy Project	Mongolia	Salvador Rivera
Mitigating Sector Reform & Tariff Adjustment	Mongolia	Salvador Rivera
Mongolia Urban Heat Pricing & Regulation	Mongolia	Gailius J. Draugelis
China Energy Efficiency Policy, Regulation and Institutional Framework Study	China	Leiping Wang
Energy Efficiency Financing	China	Leiping Wang
East Asia Regional Energy Flagship Study	Regional	Ranjit Lamech
Vietnam: Gas Master Plan Review	Vietnam	Richard Spencer
Biomass Cogeneration Development	China	Ximing Peng
Cleaner and More Efficient Coal Fired Power Generation Knowledge	China	Ranjit J. Lamech
Capacity Building among Small-Scale Off-Grid Energy Suppliers	Mongolia	Salvador Rivera
SMEs in Decentralized Energy Services in Lao PDR Program	Laos	Jie Tang
SMEs in Decentralized Energy Services in Cambodia Program	Cambodia	Rebecca Sekse
Europe and Central Asia		
Affordable Gas-fired District Heating in Ukraine	Ukraine	Peter Johansen
Thermal Power Plant Rehab: Assessment of Needs, Costs and Benefits	Ukraine	Dejan Ostojic
Supporting Electricity Market Operations	Turkey	Sameer Shukla
Establishing Regulatory Framework for Renewable Energy	Slovakia	Istvan Dobozi
South East Europe Gas Market Development Study	Regional	Franz Gerner
Global		
G+5 Countries Energy Efficiency Indicators Project	Global	Ashok Sarkar
Regional Power Sector Integration Potential	Global	Jonathan Coony
Improving the Impacts of Oil, Gas and Mining (OGM) Development on Women and Youth	Global	Adriana Eftimie
Energy Efficiency Needs and ToolKit Assessment	Global	Ashok Sarkar
Grid-Connected Renewable Energy Topical Briefs	Global	R. Anil Cabraal
Lighting Africa Part IIIa- Validation of Solar Lantern Technical Performance Specification	Global	R. Anil Cabraal
Decentralized Energy Services for IDA Countries	Global	Marlon Lezama
ESMAP: Decentralized Energy Services for IDA Countries - Global	Global	Marlon Lezama

ONGOING ACTIVITIES

ACTIVITY	COUNTRY/REGION	TASK MANAGER
Latin America and the Caribbean		
Peru Small Hydropower	Peru	Susan V. Bogach
Brazil Low Carbon	Brazil	Christophe de Gouvello
Mexico Low Carbon	Mexico	Todd M. Johnson
Strengthening Small-Scale Offgrid Energy Suppliers	Bolivia	Susan Bogach
Dissemination of Improved Cooking Stoves	Haiti	Christophe de Gouvello
TA for Improved Small-Scale Energy Supply	Nicaragua	Fernando Lecaros
Small and Medium Enterprises for Energy Services Delivery	Peru	Susan Bogach
Off-grid Rural Electrification SME Program	Bolivia	Dana Younger
Assessment of Energy Efficiency	Brazil	Todd M. Johnson
Middle East and North Africa		
Structuring the New Energy Efficiency Agency	Morocco	Pierre Audinet
Design and Application of Time of Use Tariffs and Load Management	Egypt	Anna Bjerde
Review of Energy Management Policy	Tunisia	Silvia Pariente-David
South Asia		
Renewable Energy Investment Climate	India	Mikul Bhatia
Improving Health of Women and Children through Renewables and Efficient Cookstoves	Regional	Priti Kumar
Improving Rural Electricity Services through Renewable Energy based Distributed Power Generation	India	Mikul Bhatia
Best Practice of Coal fired Power Plant Rehabilitation - Energy Efficiency Improvements by Operations and Maintenance Practice Changes	India	Mikul Bhatia
Improving State Level investment Planning & Regulation to Increase Energy efficiency - India Coal Fired Generation Rehabilitation Project	India	Mustafa Zakir Hussain
India Low Carbon	India	Kseniya Lvovsky

COMPLETED ACTIVITIES

ACTIVITY	COUNTRY/REGION	TASK MANAGER
Africa		
Facility for the follow up of Africa Energy-Poverty Workshops	Regional	Koffi Ekouevi
Impact on the Poor of the Electricity Sector Reform in the Kingdom of Lesotho	Lesotho	Gilberto de Barros
Power Sector Reform in Africa: Assessing the Impact on the Poor and Influencing Policy Decisions	Africa	Ananda Covindassamy
Women's Energy Enterprise: Developing a Model for Mainstreaming Gender into Modern Energy Service Delivery	Ghana	Kofi-Boateng Agyen
Development of a Regional Power Market in West Africa	Regional	Amarquaye Armar
Niger Energy-Poverty Action Plan (GVEP)	Niger	Michel E. Layec
Energy-Poverty Action Plan (GVEP)	Cameroon	Emmanuel Ngankam
ESMAP Energy Sector Assessment	Mauritius	Michel E. Layec
Roundtable with Africa Energy Ministers (FEMA)	Southern Africa	Arun P. Sanghvi
Energy Sector Strategy for Poverty Reduction and Growth	Djibouti	Douglas Barnes
Africa Rural and Renewable Energy Initiative (AFRREI)	Regional	Douglas Barnes
Mainstreaming Low-Cost Innovations in Electricity Distribution Networks in Africa	Regional	Ananda Covindassamy
ESMAP Multisector Impact Rural Electrification	Senegal	Christophe de Gouvello
Multisectoral Operational Plan to Maximize Poverty Reduction Impact of Rural Electrification in Senegal	Senegal	Christophe de Gouvello
Energy Sector Strategy	Ghana	Subramaniam V. Iyer
Energy Access Action Plan for Africa	Regional	Kyran O'Sullivan
Energy for Rural Transformation	Uganda	Malcolm Cosgrove-Davies

COMPLETED ACTIVITIES

ACTIVITY	COUNTRY/REGION	TASK MANAGER
Africa continued		
Design and Pilot Testing of Capacity Building Product line for SME Utility Service Providers in West Africa	Regional	Amarquaye Armar
Rural and Renewable Energy	Regional	Malcom Cosgrove-Davies
Lagos Strategy for Economic Development and Poverty	Nigeria	Deepali Tewari
Energy Policy Part II (FY06)	Ghana	Xiaodong Wang
Zambia Energy Poverty Action Plan (GVEP)	Zambia	Xiaodong Wang
Lessons from Nigeria Development of LPG Markets in Four Additional Countries	Nigeria	Mourad Belguedj
Tariff Policy Guidance	Rwanda	Malcolm Cosgrove-Davies
Energizing Rural Transformation	Tanzania	Arun P. Sanghvi
Sustainable Water and Hydro Energy for Africa	Regional	Daryl Fields
Infrastructure Services SIM	Malawi	Paivi Koljonen
Promoting Productive Uses of Electricity in Rural Areas	Regional	Ralph Karhammar
Expanding SME Outsourcing Opportunities from Utility Sector Reform - A Survey of Eastern and Southern Africa	Regional	Amarquaye Armar
ESMAP Regulatory Review (FY07)	Regional	Prasad Tallapragada
ESMAP Technical and Financial Review of NPA (FY07)	Sierra Leone	Paivi Koljonen
Lighting Africa Part IIIb: Specification for LED Lighting Systems	Regional	R. Anil Cabraal
East Asia and the Pacific		
Greater Mekong Sub-region Power Trade Strategy Meeting	Regional	Mohinder P. Gulati
China: Policy Advice on Implementation of Clean Coal Technology projects. Phase II	China	Masaki Takahashi
Scoping Study for Voluntary Green Electricity Schemes in Beijing and Shanghai	China	Noureddine Berrah
Cambodia - Renewable Energy Action Plan	Cambodia	Rebecca C. Sekse
Philippines - Village Power Fund and Incubator for Renewable Energy Enterprises	Philippines	Selina Wai Sheung Shum
Rural Electrification Policy Development and Conceptual Design of Energy Services Delivery Projects to Improve Rural Health and Education Service Delivery	Papua New Guinea	Antonie De Wilde
Vietnam - Policy Dialogue Seminar and New Mining Code	Vietnam	Charles A. Husband
China Coal Bed Methane Strategy	China	Ashok Sarkar
Development of East Asia and the Pacific Energy Business Strategy	Regional	Tae Yong Jung
Sustainable and Efficient Energy Use to Alleviate Indoor Air Pollution in Poor Rural China	China	Douglas Barnes
Development of Pro-poor National Heat Pricing and Billing Policy	China	Robert P. Taylor
Policy Reform for Enhancing Rural Electricity Access	Indonesia	Migara Jayawardena
Infrastructure Services to the Rural Poor	Mongolia	Salvador Rivera
Green Energy IPP (GRIPP)	Philippines	Sandeep Kohli
National Rural Electrification Planning	East Timor	Leiping Wang
Fuel Substitution Analysis	Indonesia	Migara Jayawardena
GEF Rural Electrification & Transmission	Cambodia	Rebecca C. Sekse
Policy Framework for Electrification and Rural Access	Indonesia	Migara Jayawardena
Training for Access to Renewable Energy	Regional	Antonie De Wilde
Indonesia Overall Energy Security Policy	Indonesia	Leiping Wang
Global Village Energy Partnership (GVEP) Asia Initiative	Regional	Antonie De Wilde
Financing for Small Scale Power Supply and Decentralized Systems	Cambodia	Antonie De Wilde
Shanghai Energy Conservation Promotion Project	China	Ximing Peng
China: Enabling Universal Access to Electric Power	China	Ximing Peng
Diesel Pollution Reduction Strategies for Cities	Regional	Jitendra J. Shah
Implementation Strategy for China's Energy Security Objectives	China	Noureddine Berrah

COMPLETED ACTIVITIES

ACTIVITY	COUNTRY/REGION	TASK MANAGER
Europe and Central Asia		
Power and Poverty: Lessons from Energy Sector PSIAs in ECA	Regional	Julian A. Lampietti
Introducing the Concepts of ESCOs to Belarus	Belarus	Maha J. Armaly
TA for Establishing a Water-Energy Consortium in Central Asia	Regional	Nikolay Nikolov
Multilateral Energy Sector Assistance to the EU Accession Countries	Regional	Bjorn Hamso
Energy Sector Regulation	Poland	Rachid Benmessaoud
Strategy to Expand Gas Distribution and Utilization in Turkey	Turkey	Sameer Shukla
Provision of Energy Services to the Poor in Tajikistan	Tajikistan	Raghuveer Y. Sharma
Impact Analysis of Policies to Increase Renewable and Low Carbon Energy Use	Serbia and Montenegro	Varadarajan Atur
Development of Power Generation in South East Europe: Implications for Investments in Environmental Protection	Regional	Istvan Dobozi
Innovative Energy Efficiency Financing Mechanism	Poland	Peter Johansen
Women in Mining Chance for Better Life Workshop	Poland	John E. Strongman
Lithuania - Heating Supply to Small Cities/Towns	Lithuania	Gary Stuggins
Natural Gas Sector Restructuring and Regulatory Reform	Azerbaijan	Alan F. Townsend
Global		
Energy Efficiency Investment Forum	Global	Ashok Sarkar
ESMAP: Development Marketplace	Global	Ede Jorge Ijjasz-Vasquez
Rural Electrification BP Dissemination - Session at Energy Week Unfunded Work	Global	Douglas Barnes
Issues in Energy Security	Global	Jonathan Coony
Road Map for Scaling up Modern Energy Services and Clean Energy	Global	R. Anil Cabraal
ESMAP: Experiences with Oil Funds	Global	Silvana Tordo
Developing a Sectoral Energy Poverty Index	Global	Arun P. Sanghvi
Capacity Building and Policy Assessment in Indoor Air Pollution	Global	Todd M. Johnson
Assessing the Impacts of Energy Sector Reform on the Poor	Global	Dominique M. Lallement
Risk Assessment Methods for Power Utility Planning	Global	Tae Yong Jung
Gender and Energy Resource Center	Global	A. Waafas Ofosu-Amaah
Energy Modules for Multitopic Household Surveys	Global	Douglas Barnes
ESMAP: Review of WB Energy Efficiency activities	Global	Ashok Sarkar
Energy Efficiency Good Practice Note	Global	Ashok Sarkar
G-8 Clean Investment Framework on Energy Efficiency	Global	Ashok Sarkar
Grid Connected Renewable Energy Policy Forum	Global	Soren Krohn
Global Trade of Biofuels	Global	Masami Kojima
Scaling Up Demand Side Energy Efficiency Improvements through Opportunities Under Programmatic CDM	Global	Jonathan Coony
Developing Regional Clean Air Networks	Global	Tae Yong Jung
Connecting the Poor to Natural Gas	Global	Douglas Barnes
Best Practices for Grid Electrification Phase II	Global	Douglas Barnes
Energy Services for the MDGs	Global	Ede Jorge Ijjasz-Vasquez
Meeting the Energy Needs of the Urban Poor: The Case of Electrification (Peri-Urban Electrification Workshop)	Global	Douglas Barnes
Developing Financial Intermediation Mechanisms for Energy Efficiency Projects in Brazil, China and India.	Global	Chandrasekar Govindarajalu
Accelerating New Clean Energy Technology	Global	Jonathan Coony
ESMAP: World Forum on Energy Regulation	Global	R. Anil Cabraal
Corruption issues in the Energy Sector	Global	Ijjasz-Vasquez
Regional Energy Trade	Global	Raghuveer Y. Sharma
Dissemination of Findings of Work on Communities Impacted by Coal	Global	John E. Strongman
Gender and Energy	Global	Amarquaye Armar

COMPLETED ACTIVITIES

ACTIVITY	COUNTRY/REGION	TASK MANAGER
Global continued		
Gender in Energy Workprogram	Global	Douglas Barnes
Source Apportionment of Fine Particulates in Developing Countries	Global	Todd M. Johnson
Review of ESMAP's Energy Sector Reform & Market Development Work	Global	Tae Yong Jung
Designing Strategies and Instruments to address Power Projects Stress Situations	Global	Jonathan Coony
Roundtable of Power Investors for Working Group 3: Governance Standards/ Code of Conduct/Performance Benchmarks for Electric Power PPPs	Global	Amarquaye Armar
Building Up on Energy Efficiency Institutional Best Practices	Global	Ashok Sarkar
Oil Price Volatility	Global	Masami Kojima
Roundtable on Bridging the Energy Efficiency Divide: Implementation Models and Best Practices	Global	Ashok Sarkar
Win-Win: Demand Side Management Options in Developing Countries	Global	Luiz T. A. Maurer
GVEP - GAPFund	Global	Douglas Barnes
Clean Investment Framework/OECD Analysis	Global	Soren Krohn
Study on Equipment Prices in the Energy Sector	Global	Dirk Pauschert
Latin America and the Caribbean		
Improving Energy Security in Uruguay	Uruguay	Philippe Durand
Renewable Energy Systems in Peruvian Amazon Region (RESPAR Project)	Peru	Xiaodong Wang
National Biomass Program	Bolivia	Philippe Durand
Haiti: Scoping Study for Household Energy Strategy	Haiti	Clemencia Torres
Honduras: Petroleum Exploration and Management	Honduras	Marc L. Heitner
Policy & Strategy for the Promotion of Renewable Energy Resources in Nicaragua	Nicaragua	Clemencia Torres
Colombia: Natural Gas: Bases for a Development Strategy of the Sector	Colombia	Dominique Lallement
LCR - Low Income Energy Assistance	Regional	Quentin T. Wodon
LCR Subsidy Review Study	Regional	Dana Rysankova
Honduras: New Approaches for Delivery of Energy Services in Rural Areas (GVEP)	Honduras	Dana Rysankova
Energy Solutions for the Poor Marginalized Communities (in the framework of GVEP follow up)	Bolivia	Dana Rysankova
Village Energy Solutions for Remote Areas of Brazil. Specific Support to the Implementation Strategy of the Universal Access Program and to the National Energy Action Plan (GVEP)	Brazil	Christophe de Gouvello
Energy Strategy Study	Ecuador	Susan V. Bogach
Biodiesel Study	Brazil	Todd M. Johnson
Review of Renewable Energy Policy and Regulatory Framework	Colombia	Walter Vergara
Benchmarking of the Electricity in LCR	Regional	Luis Alberto Andres
Monitoring & Evaluation - Energy Project	Regional	Susana M. Sanchez
Energy, Environment and Population	Regional	Eleodoro O. Mayorga Alba
BR: Energy Sector Strategy	Brazil	Enrique O. Crousillat
Power Sector Strategy	Paraguay	Lucio Monari
Development of Regional Capabilities in Three States of the Republic to Foster Energy Projects for Rural Areas, Focusing on Renewable Energy (GVEP)	Mexico	Gabriela Elizondo Azuela
Peru Rural Electrification	Peru	Susan V. Bogach
Energy Strategy	Regional	Enrique O. Crousillat
Honduras Energy Sector Study	Honduras	Lucio Monari
Southern Cone Gas Integration	Regional	Eleodoro O. Mayorga Alba
Regulatory Issues of Off-Grid Energy Service Delivery as Part of National Rural Electrification Strategies	Regional	Clemencia Torres
Innovative Financing Mechanism for Energy Efficiency in Mexico	Mexico	Charles M. Feinstein

COMPLETED ACTIVITIES

ACTIVITY	COUNTRY/REGION	TASK MANAGER
Middle East and North Africa		
Yemen Gas Incentive Framework Study	Yemen	Franz Gerner
Hydrocarbon Revenue Generation and Management	Regional	Pierre Audinet
Egypt: Natural Gas Distribution in Egypt	Egypt	Anna Bjerde
Combined Cycle Gas Turbines Workshop	Egypt	Anna Bjerde
Oil Products Sector Liberalization	Morocco	Pierre Audinet
Social Safety Net for LPG Subsidy Reduction	Morocco	Pierre Audinet
Energy Efficiency Policy	Morocco	Pierre Audinet
Energy Sector Development/Energy Reform: Social and Environmental Effects on the Poor	Morocco	Silvia Pariente-David
Ministerial Roundtable on Regional Sustainable Energy in North Africa	Regional	Pierre Audinet
Regional Workshop in Sidi Bernoussi	Morocco	Noureddine Bouzaher
Iran Energy Sector (Power Sector Note)	Iran	Anna Bjerde
Renewable Energy Regulation	Morocco	Pierre Audinet
Determination of Gas Pricing for Poor Households in Egypt	Egypt	Franz Gerner
West Bank and Gaza Energy Sector Review	Regional	Somin Mukherji
Demand Management Workshop	Egypt	Eric Groom
South Asia		
Exploring Opportunities for Improving Rural Energy Access	Afghanistan	Mudassar Imran
Regional Energy Poverty	Regional	Andrea Ryan Rizvi
Clean Investment Framework- India	India	Soren Krohn
Improving Indoor Air Quality for Poor Families: Proposal for a Controlled Experiment in Bangladesh	Bangladesh	Susmita Dasgupta
India Energy Security	India	Alan F. Townsend
Kabul Household Energy Survey (SAR Regional Grant)	Afghanistan	Michael Haney
Towards Formulating a Rural Energy Strategy	Bangladesh	Douglas Barnes
Enhancing Access and Rural Electrification - Costs & benefits, and Willingness to Pay	Pakistan	Waqar Haider
Commercialization of Improved Stoves	India	Douglas Barnes
Bhutan Hydro Exports/Hydropower Sector Study: Issues & Options	Bhutan	Pedro E. Sanchez Gamarra
Energy Trade	Regional	Vladislav Vucetic
Private Renewable Power Generation Studies/Private Sector Small-scale, Grid-connected Renewable Power Generation - Review of Experience	Sri Lanka	Mudassar Imran
Regional Power Trade	Regional	Vladislav Vucetic
Opportunity for Women in Renewable Energy Technology Utilization in Bangladesh (Phase II)	Bangladesh	M. Iqbal

ANNEX 3

Reports Published During Calendar Year 2007 and Fiscal Year January Through June 2008

FLAGSHIP REPORTS

Number/ Year	Country/Region	Report Title	Author	Date
ISBN-0-8213-6633-5	Regional ECA	People and Power: Electricity Sector Reforms and the Poor in Europe and Central Asia. Published by ESMAP under EXTOP's Directions in Development series.	Lampietti/Sudeshna/ Branczik	07/07
ISBN-978-1-933115-43-6	Global	The Challenge of Rural Electrification: Strategies for Developing Countries. Published jointly with RFF.	Barnes	11/07
ISBN-978-8213-7304-0	Global	Financing Energy Efficiency: Lessons from Brazil, China, India, and Beyond. Published by ESMAP under EXTOP's stand-alone book series.	Taylor/Govindarajalu/ Levin/Meyer/Ward	02/08
ISBN-978-0-8213-7481-8	Global	Accelerating Clean Energy Technology Research, Development and Deployment. Lessons from Non-energy Sectors. Published by ESMAP under EXTOP's World Bank Working Paper series, No. 138.	Avato/Coony	05/08

SPECIAL SERIES REPORTS

Number/ Year	Country/Region	Report Title	Author	Date
001/07	Global	Risk Assessment Methods for Power Utility Planning RENEWABLE ENERGY THEME	Hertzmark	03/07
002/07	China	Sustainable and Efficient Energy Use to Alleviate Indoor Air Pollution in Poor Rural Areas in China ENERGY POVERTY THEME	Baris/Ezzati	05/07
003/07	Nicaragua	Unlocking Potential, Reducing Risk: Renewable Energy Policies for Nicaragua RENEWABLE ENERGY THEME	Mostert	05/07
004/07	Global	Considering Trade Policies for Liquid Biofuels RENEWABLE ENERGY THEME	Kojima	07/07

FORMAL REPORTS

Number/ Year	Country/Region	Report Title	Author	Date
325/07	Turkey	Turkey's Experience with Greenfield Gas Distribution since 2003.	Shukla	05/07
326/07	China	China - Coal Bed Methane Strategy.	Zhao	07/07
327/07	Yemen	Republic of Yemen: A Natural Gas Incentive Framework.	Gerner	12/07
328/07	Global	Greenfield Gas Distribution: Cross-country Experience.	Shukla	12/07
330/08	China	China: Development of National Heat Pricing and Billing Policy.	Meyer	03/08
332/08	Regional AFR	Maximizing the Productive uses of Electricity to Increase the Impact of Rural Electrification Programs.	de Govello/Durix	04/08
335/08	Bangladesh	Improving Indoor Air Quality for Poor Families: A Controlled Experiment in Bangladesh.	Dasgupta/Huq/ Khaliquzzaman/ Wheeler	04/08

TECHNICAL REPORTS

Number/ Year	Country/Region	Report Title	Author	Date
109/07	Senegal	Multisectoral Operational Plan to Maximize Poverty Reduction Impact of Rural Electrification in Senegal. French only.	de Gouvello	05/07
110/07	Djibouti	Electricity Cost Reduction Assessment and Energy Access Sector Strategy for Djibouti.	Hamaide	2/07
111/07	Peru	Solar-Diesel Hybrid Options for the Peruvian Amazon: Lessons Learned from Padre Cocha.	Wang	04/07
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Number/ Year	Country/Region	Report Title	Author	Date
9	Mexico	Hedging Mexico's Electricity Bets: The Case of Renewable Energy	Farchy	06/07
11	China	Scaling up Renewable Energy in China: Economic Modeling Methods and Application.	Spencer/Meier/ Berrah	06/07

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Number/ Year	Country/Region	Report Title	Author	Date
011/07	Regional EAP	Philippines Village Power Fund and Incubator for Renewable Energy Enterprise.	Shum	03/07
012/07	Regional AFR	Ghana Energy Policy Economic and Sector Work Papers: The Electricity Sector.	Iyer	12/07

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ADMINISTRATIVE REPORTS

Number/ Year	Country/Region	Report Title	Author	Date
-	Global	ESMAP 2006 Annual Report	ESMAP	09/07

ABBREVIATIONS AND ACRONYMS

ABG	annual block grants
AfDB	African Development Bank
AFR	Africa Region of the World Bank Group
AFTEG	The World Bank Group Africa Energy Group
AM	advance market
ASTAE	Asia Sustainable and Alternative Energy Program
BMZ	Federal Ministry for Economic Cooperation and Development, Germany
CASAREM	Central Asia–South Asia Regional Electricity Market Project
CBM	coal bed methane
CDM	clean development mechanism
CEIF	Clean Energy Investment Framework[1]
CG	Consultative Group
CMM	coal mine methane
COCPO	Oil, Gas and Mining Policy Division of the World Bank Group
DFID	U.K. Department for International Development
EAP	East Asia and the Pacific Region of the World Bank Group
ECA	Europe and Central Asia Region of the World Bank Group
EE	energy efficiency
EEfSD	Energy Efficiency for Sustainable Development
ESCO	energy service company
ESMAP	Energy Sector Management Assistance Program
ETFP	energy trust-funded programs
ETWD	Energy, Transport, and Water Department of the World Bank Group
FEMA	Forum of Energy Ministers in Africa
G&T	generation and transmission
GAPFund	Global Village Energy Partnership Action Program Fund
GEF	Global Environment Facility
GTZ	German Agency for Technical Cooperation
GVEP	Global Village Energy Partnership
HGP	Human Genome Project
IDA	International Development Association
IDER	Instituto de Desenvolvimento Sustentável e Energias Renováveis
IEG	Internal Evaluation Group of the World Bank Group
IFC	International Finance Corporation
IFI	international finance institution
IPCC	Intergovernmental Panel on Climate Change
LCR	Latin America and the Caribbean Region of the World Bank Group
LNG	liquefied natural gas
LPG	liquefied petroleum gas
MDG	Millennium Development Goal
MDTF	multidonor trust fund
MNA	Middle East and North Africa Region of the World Bank Group
M&E	monitoring and evaluation
NGO	nongovernmental organization
OECD	Organization for Economic Co-operation and Development
O&M	operation and maintenance contract
PPPs	public-private partnerships
PV	Photovoltaic
RE	renewable energy
RLIA	Rural Lighting Initiative for Africa
SAR	South Asia Region of the World Bank Group
SDN	Sustainable Development Network of the World Bank Group
SFCC	Strategic Framework on Climate Change
SME	small and medium enterprise
SWAp	sector wide approach
TAG	Technical Advisory Group
WBG	The World Bank Group

Energy Sector Management Assistance Program (ESMAP)

Purpose

The Energy Sector Management Assistance Program is a global knowledge and technical assistance partnership administered by the World Bank Group and sponsored by bilateral official donors since 1983. ESMAP's mission is to assist clients from low-income, emerging, and transition economies to secure energy requirements for equitable economic growth and poverty reduction in an environmentally sustainable way.

ESMAP follows a three-pronged approach to achieve its mission: think tank/horizon-scanning, operational leveraging, and knowledge clearinghouse (knowledge generation and dissemination, training and learning events, workshops and seminars, conferences and roundtables, website, newsletter, and publications) functions. ESMAP activities are executed by its clients and/or by World Bank Group staff.

ESMAP's work focuses on three global thematic energy challenges:

- Expanding energy access for poverty reduction;
- Enhancing energy efficiency for energy secure economic growth, and
- Deploying renewable energy systems for a low carbon global economy.

Governance and Operations

ESMAP is governed and funded by a Consultative Group (CG) composed of representatives of Australia, Austria, Denmark, France, Germany, Iceland, the Netherlands, Norway, Sweden, the United Kingdom, and the World Bank Group. The ESMAP CG is chaired by a World Bank Group Vice President and advised by a Technical Advisory Group of independent energy experts that reviews the Program's strategic agenda, work plan, and achievements. ESMAP relies on a cadre of engineers, energy planners, and economists from the World Bank Group, and from the energy and development community at large, to conduct its activities.

Further Information

For further information or copies of project reports, please visit www.esmap.org. ESMAP can also be reached by email at esmap@worldbank.org or by mail at:

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