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Energy

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## ESMAP 2003 HIGHLIGHTS

- Celebrated 20th anniversary as a joint World Bank-UNDP program
- 124 ongoing projects in more than 40 countries, up from 89 five years ago in 1998.
- 43 new projects launched with a cumulative budget of US\$6.5 million, up from 29 new projects with a cumulative budget US\$5.6 million in 2002.
- US\$30.3 million in total funding of projects
- Launched three Calls for Proposals
- Average of 38 proposals received in last three Call of Proposals, up from average of 13 in the previous three Calls.
- More than 250 organizations signed on to Global Village Energy Partnership's Statement of Principles
- Donors' contribution to the Programme totaling US\$ 7.2 million
- Cycle time for proposal approvals and funding allocations maintained at ten weeks from the announcement of the Call
- More than 30 reports published on ESMAP-funded activities
- Delivery of nearly 20 workshops, brown bag lunches and conferences around the globe as part of ESMAP's knowledge dissemination strategy



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ESMAP promotes the role of energy in poverty reduction and economic growth in an environmentally responsible manner. Its work applies to low-income, emerging, and transition economies and contributes to the achievement of internationally agreed development goals.

ESMAP strives to expand the global knowledge base for addressing energy issues.





MISSION STATEMENT

MISSION STATEMENT



## The Energy Sector Management Assistance Programme

*The Energy Sector Management Assistance Programme (ESMAP) is a global technical assistance programme sponsored by a group of donors, including The World Bank and the United Nations Development Programme (UNDP), and managed by The World Bank.*

*ESMAP provides policy advice and other technical assistance to governments, public institutions, and private businesses. It focuses on three strategic areas: the development of energy markets; the promotion of environmentally sustainable energy production and uses; and increased access to reliable, efficient and affordable energy services by un-served or underserved populations.*

*ESMAP concentrates on energy related issues not yet mainstreamed in the operations of bilateral or multilateral development institutions, and on private sector energy issues. ESMAP is a global knowledge partnership that involves local and international public institutions, NGOs, and businesses in the formulation and implementation of knowledge activities. Through studies, pilot projects, and training, ESMAP strives to expand the global knowledge base for addressing energy issues to the benefit of developing and transition economies.*



FOREWORD

FOREWORD

ESMAP is dedicated to helping policymakers, the private sector, nongovernmental organizations, donor partners, and others provide environmentally and socially sustainable energy services as a means to reduce poverty and increase economic growth. As explained in this 2003 Annual Report, ESMAP is in the midst of fulfilling a three-year business plan that focuses on three priority areas critical to meeting this goal: increased access to reliable, efficient, and affordable energy services by the un-served and under-served; promotion of environmentally sustainable energy production and uses; and development of efficient energy markets.

ESMAP marked its 20th anniversary in 2003. Since it was established under the joint sponsorship of The World Bank and the United Nations Development Programme in 1983, it has operated in more than 100 different countries on energy-related issues ranging from strengthening market reform efforts to urban air quality to rural electrification. ESMAP's strategy and Business Plan fully supports the implementation of the Infrastructure Action Plan adopted by the Board of Executive Directors of the World Bank Group in July 2003. The Plan highlights the linkages between infrastructure and the Millennium Development Goals.

Through its studies, workshops, training, and technical assistance activities described in this report, ESMAP seeks to generate and share knowledge that will lead to investments in energy services, improved living conditions for people in rural, peri-urban, and urban communities in developing countries and transition economies around the world.

ESMAP has taken a leading role in increasing the visibility within the Bank and within the countries of the interrelationship between energy and poverty. For example, in 2003, a series of Energy-Poverty Workshops in Latin America, the Asian subcontinent, and in Africa, brought together policymakers from different countries and different sectors to discuss steps they can take to scale-up the delivery and availability of modern, cost-efficient, and environmentally sustainable energy services for their populations, and to sustain economic growth. These events have also highlighted the critical role of energy in sustainable development and in achieving the delivery of better health care, education, and other services.

This annual report provides an overview of ESMAP activities as well as spotlights representative projects from the portfolio that support poverty alleviation, environmental sustainability, and strengthened markets. It also explains the governance and management of ESMAP and provides a financial review of how donor funds have been disbursed in the past year.

This annual report is a tribute to the dedication and hard work of those who have contributed to the program implementation and financing in 2003. We are also extremely grateful to the Technical Advisory Group members for their dedication, hard work, and useful suggestions, and in particular, to Mr. Andrew Barnett, who has assumed the responsibility during the year of Moderator to the Technical Advisory Group.



Jamal Saghir  
Director, Energy and Water  
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## ACKNOWLEDGEMENTS

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## LIST OF ABBREVIATIONS AND ACRONYMS

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AFFREI	Africa Rural and Renewable Energy Initiative
ADB	Asian Development Bank
AFR	Sub-Saharan Africa Region
AFREPEN	African Energy Policy Research Network
ALGAS	Asia Least-cost Greenhouse Gas Abatement Strategy
ALRI	Acute Lower Respiratory Infection
AP	Andhra Pradesh (India)
ARPEL	Asistencia Recíproca Petrolera Empresarial Latinoamericana
ASTAE	Asia Alternative Energy Program
BNPP	Bank-Netherlands Partnership Program
CAI-SSA	Clean Air Initiative in Sub-Saharan Africa
CEE	Central and Eastern Europe
CG	Consultative Group
CIDOB	Confederation of Indigenous Peoples of Bolivia
CIDA	Canadian International Development Agency
CNG	Compressed Natural Gas
COICA	Coordinadora de Organizaciones Indígenas de la Cuenca Amazónica
CONFENIAE	Confederation of the Nationalities Indigenous to the Amazon of Ecuador
CPTS	Centro de Promoción de Tecnologías Sostenibles
CRESP	China Renewable Energy Scale-up Program
DANIDA	Danish International Development Assistance
DFI	Development Finance Institution
DFID	Department for International Development, UK
E7	Organization of nine leading electric utilities from G7 countries
EAP	East Asia and Pacific Region
ECA	Europe and Central Asia Region
EDF	European Development Fund
EER	Energy and Environment Review
ENDA	Environment and Development Action
ESMAP	Energy Sector Management Assistance Programme
ETFP	Energy Trust Funded Programs
FFEM	Fonds Français pour l'Environnement Mondial
FREE	Romanian Energy Efficiency Fund
FSU	Former Soviet Union
FUNDA-PRO	La Fundación para la Producción
GDP	Gross Domestic Product
GEF	Global Environment Facility
GVEP	Global Village Energy Partnership
IADB	Inter-American Development Bank
IAP	Indoor Air Pollution
ICT	Information and Communication Technologies
IFC	International Finance Corporation
ILO	International Labour Organization
IPCT	Indigenous Peoples' Communal Territories
IPEICA	International Petroleum Industry Conservation Association
IZDIHAR	Association des Opérateurs Economiques de la Zone Industrielle de Sidi Bernoussi Zenata

KfW	Kreditanstalt für Wiederaufbau (German Development Bank)
KITE	Kumasi Institute of Technology and Environment
kW	Kilowatt
kWh	Kilowatt-hour
LCR	Latin America and the Caribbean Region
LG	Leaded Gasoline
LPG	Liquefied Petroleum Gas
M&T	Monitoring and Targeting
MDGs	Millennium Development Goals
MENA	Middle East and North Africa Region
NBP	National Biomass Program
NEPAD	New Economic Partnership for Africa
NFFO	Non-Fossil Fuel Obligation
NGOs	Non-Governmental Organizations
NOVACON	Novo Conceito em Serviço Público
NREL	National Renewable Energy Laboratory (United States of America)
NTF-PSI	Norwegian Trust Fund for Private Sector and Infrastructure
ODA	Office of Development Assistance
OED	Operations Evaluation Department, The World Bank
OLADE	Organización Latinoamericana de Energía
PERZA	Proyecto de Electrificación Rural en Zonas Aisladas (Off-Grid Rural Electrification Project)
PV	Photovoltaic
REACH	Renewable Energy, Energy Efficiency and Climate Change
REAP	Renewable Energy Action Plan
RIC	Rural Information Center
RPTES	Regional Program for the Traditional Energy Sector
SAR	South Asia Region
SANEATINS	A joint Venture Water Utility for the state of Tocantins in Brazil
SHS	Solar Home System
TAG	Technical Advisory Group of ESMAP
TCA	Two Control Zone
TFESSD	Trust Fund for Environmentally and Socially Sustainable Development
ULG	Unleaded Gasoline
UN	United Nations
UNF	United Nations Foundation
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
US	United States of America
USAID	United States Agency for International Development
WEHAB	Water, Energy, Health, Agriculture, and Biodiversity
WHO	World Health Organization
WSSD	World Summit on Sustainable Development



2003

DONORS AND MEMBERS OF  
THE CONSULTATIVE GROUP,  
TECHNICAL ADVISORY GROUP,  
AND ESMAP TEAM IN 2003



## CONSULTATIVE GROUP

### BELGIUM

General Administration for Development  
Cooperation

### CANADA

Canadian International Development Agency

### DENMARK

Ministry of Foreign Affairs

### FINLAND

Ministry of Foreign Affairs

### FRANCE

Ministry of Foreign Affairs

### GERMANY

Bundesministerium für Wirtschaftliche  
Zusammenarbeit und Entwicklung

### NORWAY

Royal Ministry of Foreign Affairs

### SWEDEN

Swedish International Development Cooperation  
Agency

### SWITZERLAND

State Secretariat for Economic Affairs

### THE NETHERLANDS

Ministry of Foreign Affairs, Climate, Energy and  
Environment Technology Division (DML/KM)

### UNITED KINGDOM

Department for International Development

### UNITED NATIONS FOUNDATION

## CO-SPONSORING ORGANIZATIONS

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UNITED NATIONS DEVELOPMENT PROGRAMME

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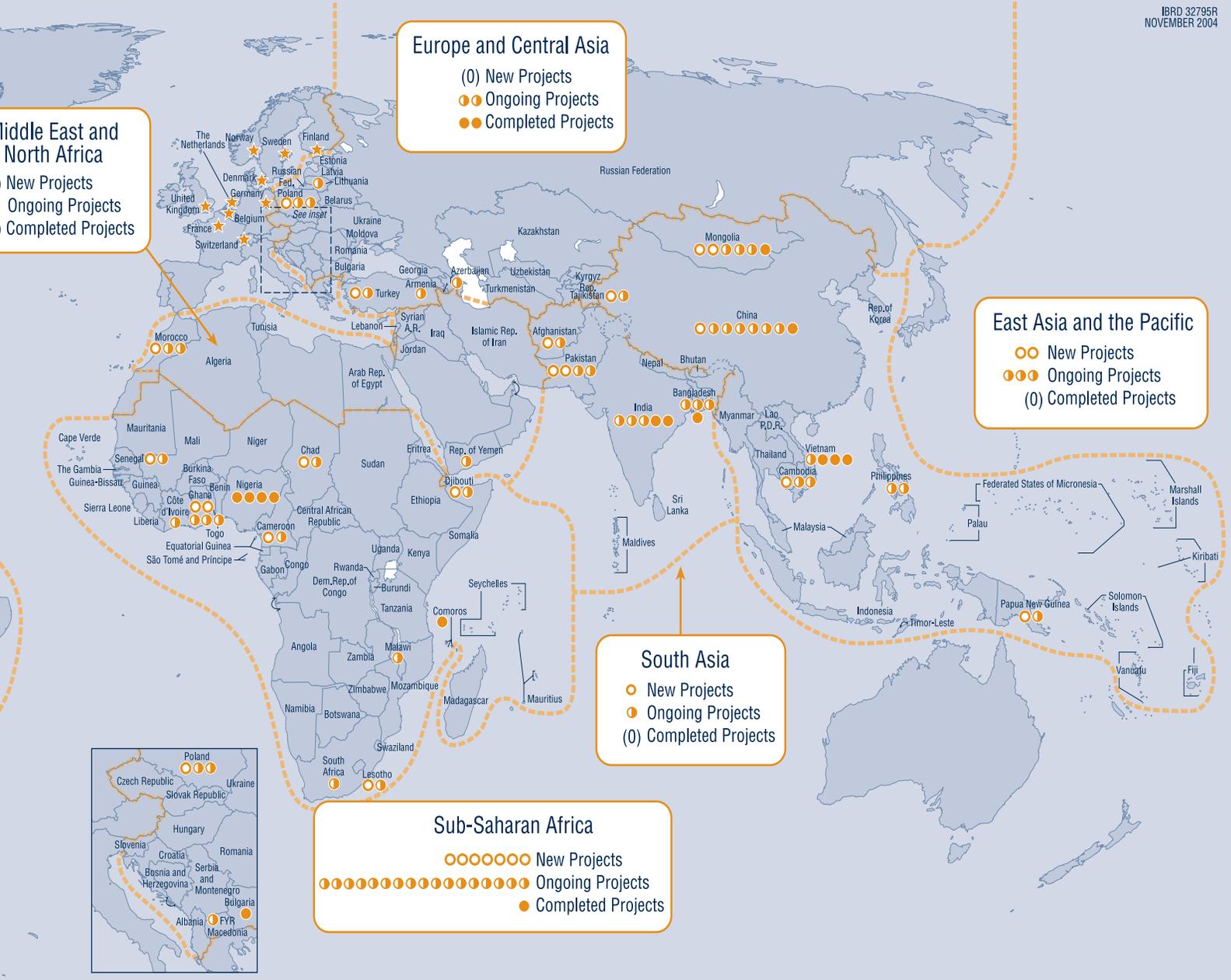
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# LEVERAGING THE INFRASTRUCTURE ACTION PLAN

1

# LEVERAGING THE INFRASTRUCTURE ACTION PLAN

The year 2003 was the opportunity for ESMAP to support the development and early implementation of the Infrastructure Action Plan (IAP), which the Board of Directors of the World Bank Group approved on July 8, 2003. The IAP evolved as the logical implementation tool of the renewed call for investments in infrastructure raised at the World Summit on Sustainable Development (WSSD) in 2002 as a result of which infrastructure services have been recognized as essential to achieving the Millennium Development Goals. As stated in the document, there was “an increased consensus on the part of clients, the Board and Management that the Bank Group needs to increase its engagement in infrastructure in light of growing investment needs, withdrawal of private investors, and growing recognition that the MDGs can only be met in a multi-sectoral way”. This was music to ESMAP’s ears, as it has strived over the past five years, in particular, to analyze, document, and promote the clear linkages between the availability of energy services, poverty reduction, and economic growth. This is also fully consistent with the Energy Business Renewal Strategy (EBRS) approved by the Board in May 2001 which aims to promote energy solutions for economic growth and poverty reduction. The challenge as always is in implementation. ESMAP has therefore fully defined its priorities with the orientations given by WSSD and the EBRS, while exercising selectivity for greater efficacy. In line with its mandate, ESMAP has been well-placed to respond to the demands of the Infrastructure Action Plan. More specifically, its 2002–2004 Business Plan contained the essential components to support two key elements of the IAP: 1) help the Bank and other partners introduce innovation in their business activities to meet client country demand for infrastructure service and 2) strengthen innovative approaches to develop sector knowledge, including measuring results and impacts.

## **RESPONDING TO CLIENT COUNTRY DEMAND FOR INFRASTRUCTURE**

In 2003, ESMAP was able to bring to fruition the results of country strategies or initiate new ones which have led to new major engagements with

client countries. This is for instance the case of Brazil, where ESMAP supported the preparation of an innovative rural electrification strategy aligned with the MDGs which has been adopted by the new government to develop investment programs for which the Government has now requested significant financing from the World Bank and other financial institutions. With these programs, Brazil aims to complete servicing the 2.5 million un-electrified households by 2010, including in remote areas, both through grid and off-grid based services. Another example is the support provided to Yemen to identify the priority energy needs to be addressed through the financing of a Social Fund.

In order to revitalize the scaling-up of energy services, through new multi-sector approaches and private sector/community based delivery mechanisms, ESMAP has continued providing significant support to the implementation of the Global Village Energy Partnership, launched at WSSD. Building up on the design of the Addis Ababa regional workshop on *Energy and Poverty Reduction: a multi-sectoral approach* of October 2002 which reached out to 8 African countries, in 2003 ESMAP partnered with UNDP and other multilateral and bilateral agencies and NGOs to conduct 6 more workshops, both regional and national, benefiting a total of 31 countries, in Africa, Latin America, and Asia. The merits of these workshops include building-up first hand experience for multi-sector multi-stakeholder country delegations *to work together* in identifying energy solutions and investment priorities in energy services in order to meet the Millennium Development Goals and to build a schematic action-plan that can feed into the country PRSP. More than 15 countries are today in the process of pursuing the work initiated in these workshops, either through the implementation of new investment programs (Bolivia, Mali), or the preparation of new ones (e.g. Cameroon, Guatemala, Honduras, Mexico, Senegal, Zambia).

Broadening the menu of options for public and private sector infrastructure provision has also

been part of ESMAP achievements in 2003. In cooperation with the Global Partnership on Output Based Aid (GPOBA), ESMAP has undertaken some innovative projects aiming at finding ways of benefiting from both the technical expertise and financial resources from the private sector, particularly the local private sector. Technical Assistance was provided to the Philippines to analyze the regulatory framework for rural electrification. As a result, new options have been designed in terms of regulatory methodology for rural electrification, Investment Management Contracts, and Energy Services Contracts in order to bring private investment and management into electricity cooperatives and to provide electricity to areas outside their coverage. Under the umbrella of the Global Village Energy Partnership, various consultations with private developers, entrepreneurs, and operators were held to identify success stories as well as bottlenecks for them to further expand their activities. The results of these consultations have been published and are now being used to design new solutions.

## **STRENGTHENING COUNTRY-LEVEL SECTOR KNOWLEDGE AND MEASURING RESULTS AND IMPACTS**

When ESMAP was first established, the Country Energy Assessment was its main line of business and made its reputation. Although the overall demand for this product has declined as the countries developed their own sector analytical capabilities, client countries continue to request ESMAP for supporting the development of their knowledge base either at the sub-sector level, such as the analysis of opportunities and options for developing renewable energy, as was done for Mexico, or to learn from the experience from other countries, such as the series of seminars in Gabon and Nigeria on Management of Revenue from hydrocarbons.

A key area for ESMAP has been to help document across a large number of countries the cost and sources of energy for the poorest segments of the population, which has major implications in the

analysis of the affordability of energy service options and the design of subsidies. ESMAP has now taken the lead in designing energy modules for cost effective base-line surveys—be they implemented with World Bank support such as the Living Standards Measurement Surveys (LSMS), Household Health Surveys by WHO, or other survey instruments. ESMAP's methodological work to monitor the results and measure the impact of energy services on poverty reduction is increasingly mainstreamed through Bank lending operations. It is also being disseminated to other organizations such as the UNDP-Millennium Development Goals Initiative, and the EUEI-GVEP Monitoring and Evaluation Initiative. These are essential tools for all development partners to be able to account for the results and impacts of their activities.

## **BEYOND ESMAP'S 2002-2004 BUSINESS PLAN**

One more year is left to complete the current ESMAP Business Plan. ESMAP will therefore be challenged, in 2004, to again look at the next 3-5 year horizon. Even though major efforts have been deployed since WSSD by governments and other development partners to re-engage very proactively in energy, the energy world of developing countries continues to experience a serious crisis. The annual rate of increase in the availability of modern energy services is growing globally very slowly, even declining in the regions subject to high demographic pressure. Public sector funding is increasing minimally as compared to needs and private sector funding continues to be deterred by the high perceived risks associated to emerging markets. The present geopolitical uncertainties and high costs in the hydro-carbon markets are increasing the vulnerability of countries presently relying on imports for their primary energy resource needs. Furthermore, industrialized countries and fast growing economies in Asia are in the front line to secure primary resources, further increasing the risk of the poorest countries to be left behind. Against this background of a significant energy crisis,

four sets of issues are developed below to stimulate the debate:

- **Energy security:** How to secure that users “climb up” the energy ladder with positive social economic gains? How to secure more resilient and reliable energy, with a sufficiently diversified resource base, through a market-based approach, including through power trade? Answers to these questions lead to another set of questions, ranging from the potential for increasing regional power trade, to expanding the contribution of competitive renewable energy, including medium to large scale hydropower and biomass or substituting biomass with liquid fuels.
- **Financing:** Resilience is also linked to financing availability, therefore leading to the question of how to secure financing to sustain both higher levels of domestic investments and imports? How to mobilize effectively both public and private capital? How to build effective public-private partnerships? How to create a competitive domestic private sector in developing countries, with commensurate strength to industrialized countries’ private companies, in terms of both managerial, technical, and financial competence, including in the hydro-carbon sectors?
- **Distributing Energy Resources and Services:** How to resolve the enormous disparities amongst countries? Given the current consumption trends in industrialized countries,

how can resources be ‘set aside’ to enable countries presently lagging behind to have also their chance to develop their energy systems to ensure the growth of their economies and the improvement of their living standards? How can developing countries learn more from the experience of industrialized countries? In what kind of R & D should they invest? How to resolve the enormous disparities within countries, and provide services to the rural areas under the mounting pressure of urbanization?

- **Building up Human Capital:** On the one hand, human energy is the most important source of energy in developing countries, on the other hand, few countries have invested systematically either in technologies which can increase the basic productivity of their human energy, or in building up their human capital for formulating policies, managing institutions, adapting technologies, and providing services. What should be the priorities and implementation mechanisms to accelerate the development of human capital for a more performing energy sector?

In preparing its next business plan, ESMAP proposes to engage in wide consultations on these and other issues both with developing country partners, donors, NGOs and other energy sector stakeholders so that it will be better positioned to provide the intellectual leadership, innovation, knowledge, and operationalization support that is in its mandate.



## PRODUCTS AND SERVICES

2

## PRODUCTS AND SERVICES

ESMAP's mandate has evolved over time to meet the changing needs of its clients. ESMAP has operated in over 100 countries through over 520 activities covering a broad range of energy issues. At ESMAP's inception in the early 1980s, these activities were almost exclusively Country Energy Assessments that served to fill the knowledge gap on the energy demand-supply balance in specific countries, and provide options to address priority energy issues in an environment of high energy price volatility.

ESMAP provides technical assistance which helps design and build consensus on policies for the sustainable development of energy services. This technical assistance is directed to a wide-range of stakeholders: governments, NGOs, public and private institutions in developing and transition economies.

ESMAP's Technical Assistance, Strategic Advice, Pre-investment Work, Lessons Learned, and Best Practice include:

- Specific Studies
- Advisory Services
- Pilot Projects

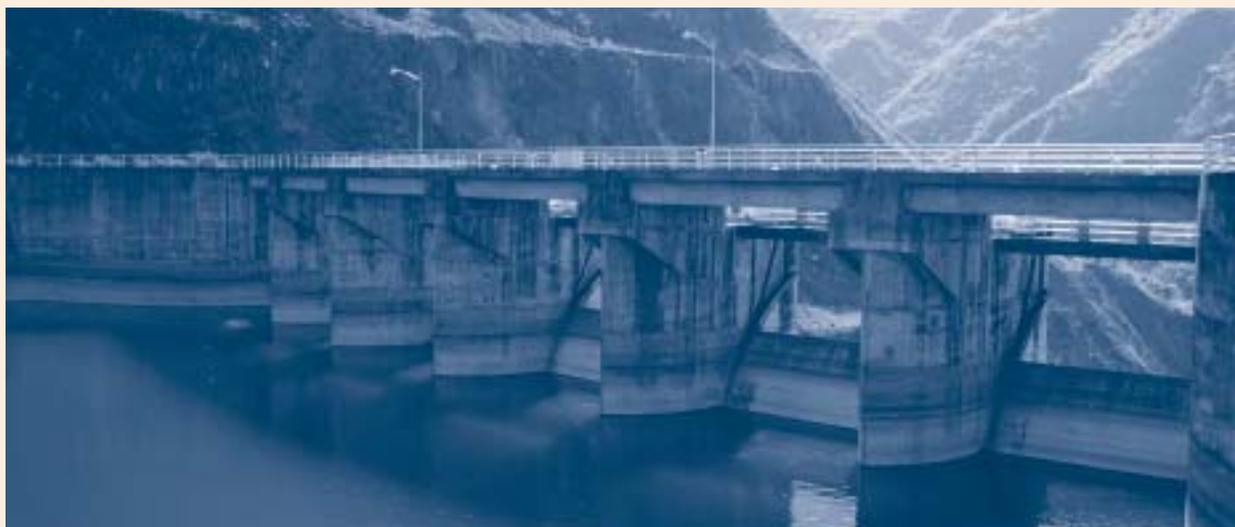
ESMAP's interventions are positioned at two points in the policy and project cycle: (1) up-

stream (pre-investment) on issues that have a clear potential for key policy formulation and innovative energy investment, and (2) downstream (*ex post*) through the evaluation and distillation of emerging best practice, followed by aggressive knowledge dissemination.

ESMAP's Knowledge Dissemination Instruments include:

- Printed publications, including activity final reports and a Technical Paper series
- Two-pagers: Highlights from ESMAP Projects
- The ESMAP Annual Report
- Publications jointly published with other organizations
- Electronic downloadable publications at <http://www.worldbank.org/esmap>
- Publications stored in searchable CD ROMs
- International or regional conferences and roundtables
- Training: Regional or national workshops and seminars
- Brown Bag Lunch seminar series in The World Bank Group

ESMAP maintains these main categories of products and services in order to deliver its 2002-2004 Business Plan.





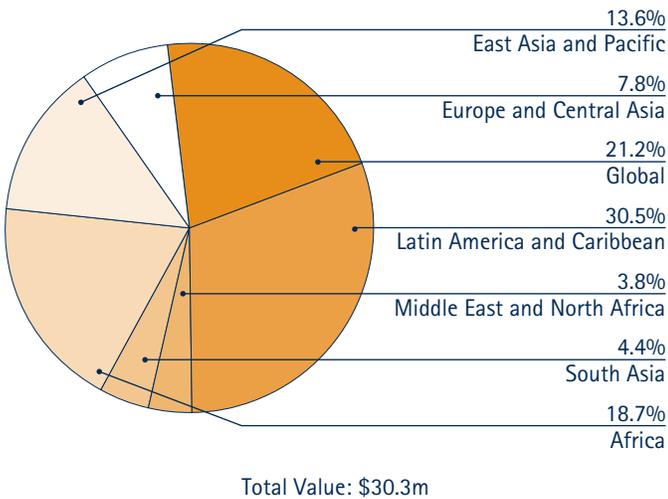
## OPERATIONAL OVERVIEW

3

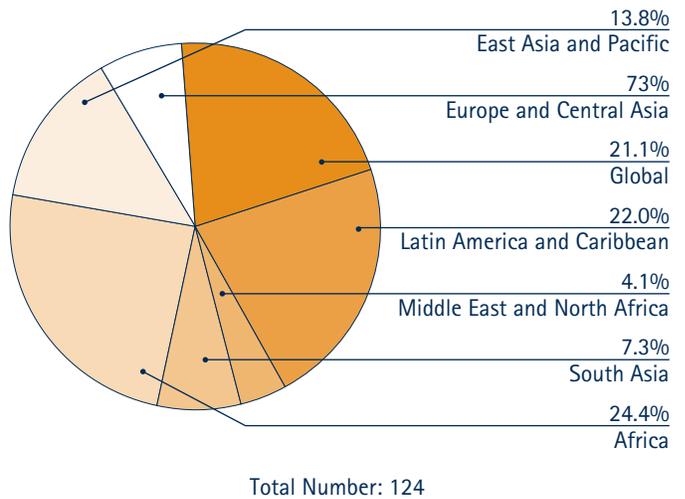
## OPERATIONAL OVERVIEW

# ESMAP PORTFOLIO AT A GLANCE AS OF DECEMBER 31, 2003

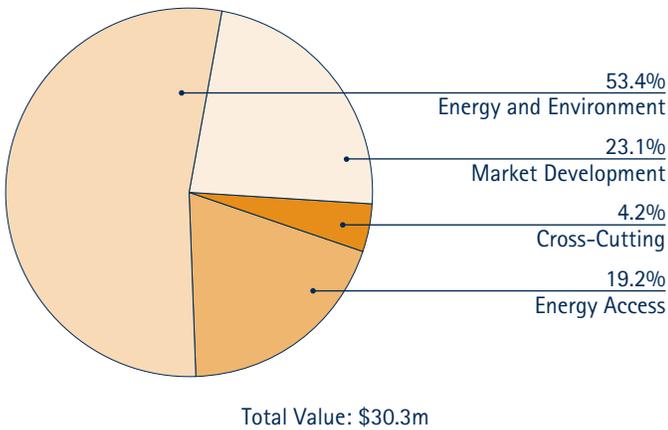
**Figure 3.1 Breakdown by Geographic Area**  
*(as a % US\$ Value)*



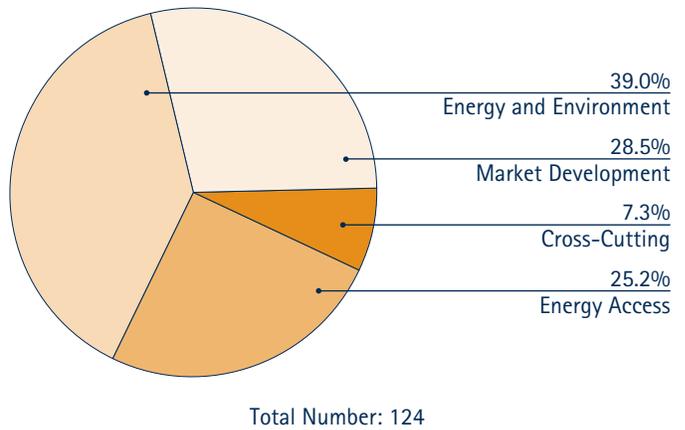
**Figure 3.3 Number of Projects**  
*(by Geographic Area)*



**Figure 3.2 Breakdown by Strategic Area**  
*(as a % US\$ Value)*

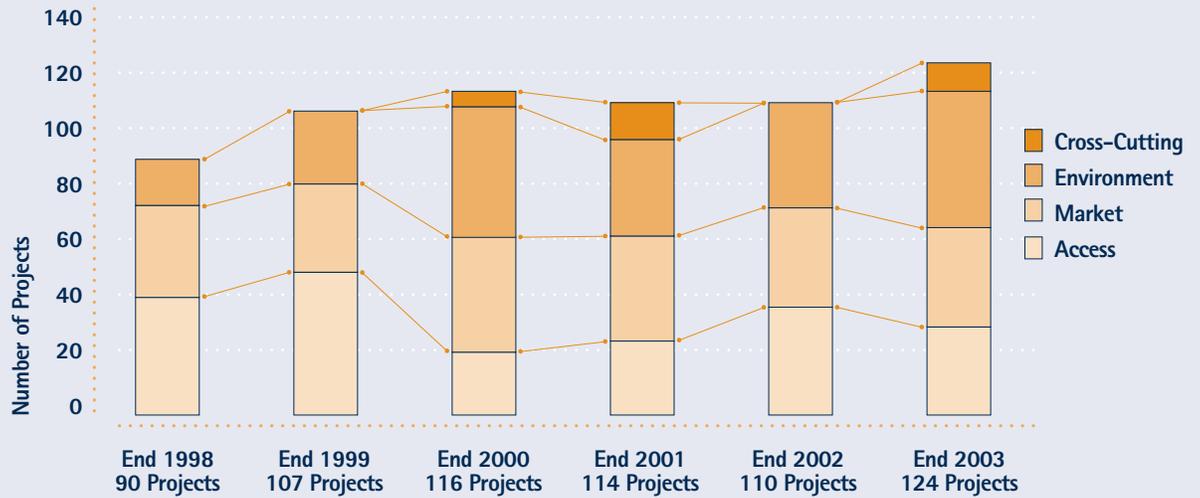


**Figure 3.4 Number of Projects**  
*(by Strategic Area)*



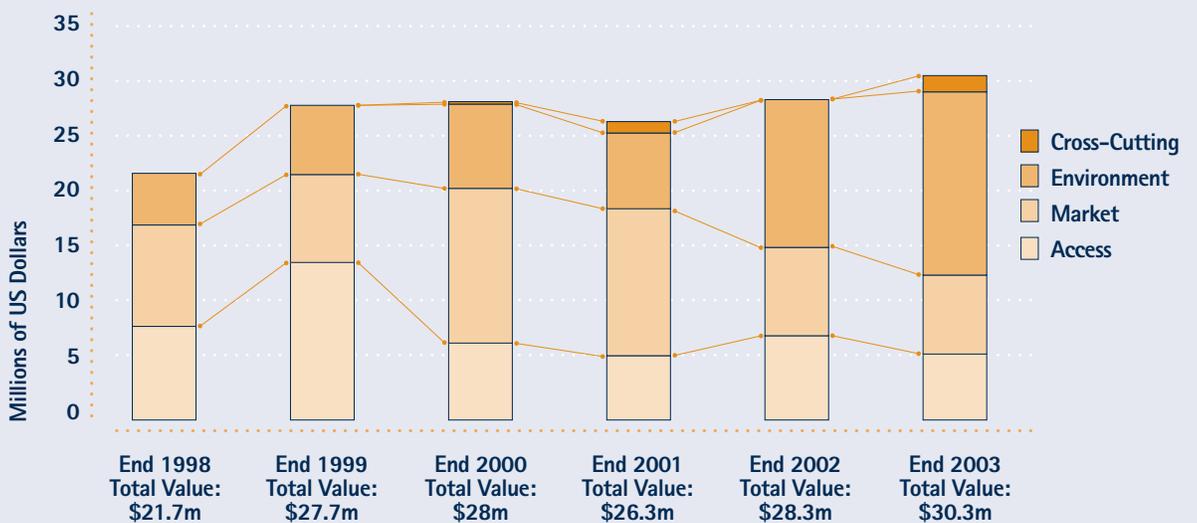
**Figure 3.5 Evolution of Portfolio by Strategic Area 1998–2003**

By Number of Projects



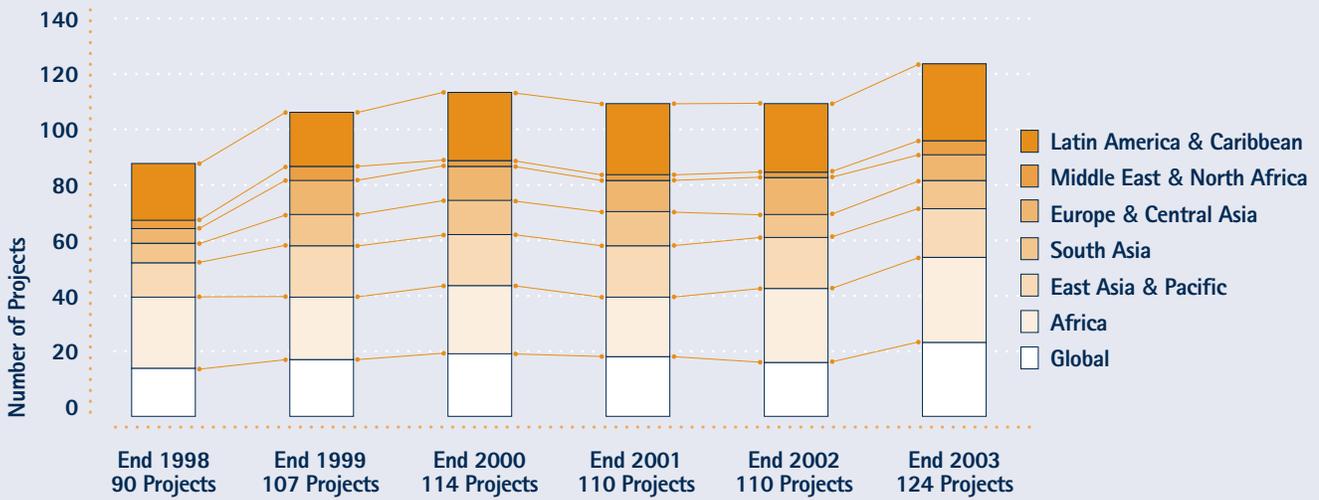
**Figure 3.6 Evolution of Portfolio by Strategic Area 1998–2003**

By Value of ESMAP Funding



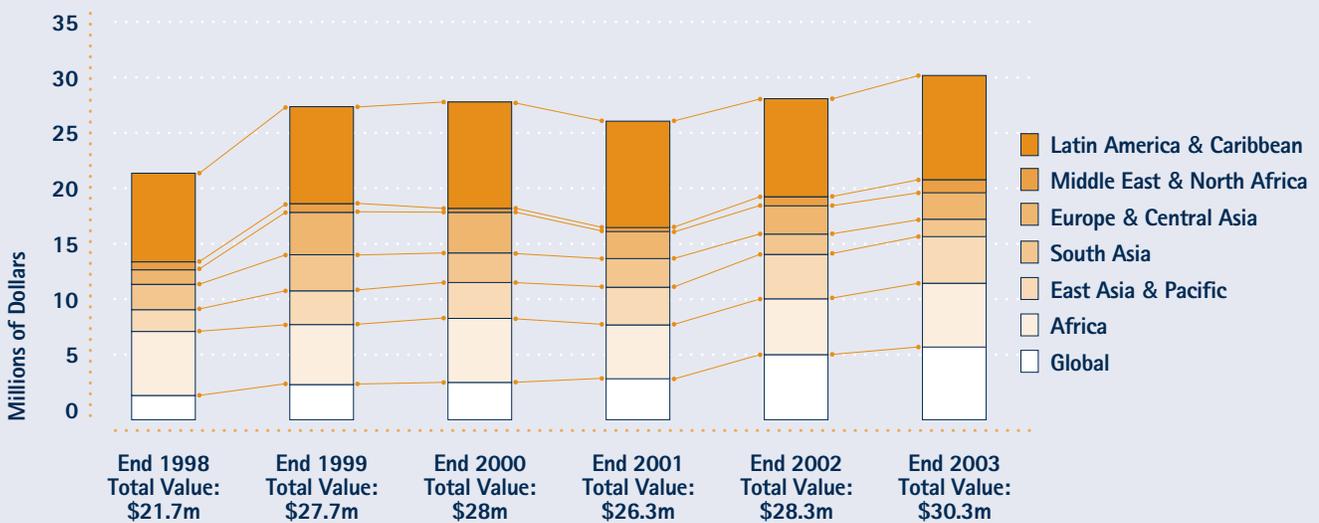
**Figure 3.7 Regional Distribution of Portfolio 1998–2003**

By Number of Projects



**Figure 3.8 Regional Distribution of Portfolio 1998–2003**

By Value of ESMAP Funding





## PORTFOLIO OVERVIEW

4

## PORTFOLIO OVERVIEW

During 2003, the ESMAP portfolio grew both by dollar value and by number. The value of the portfolio rose from US\$28.3 million at year-end 2002 to US\$30.3 million at the end of 2003, as 44 new projects worth more than US\$5.8 million were launched. Twenty-two projects worth US\$3.4 million left the portfolio as they were brought to financial closure during 2003. The value of the portfolio at the end of 2003 includes two major projects in Bolivia (representing nearly US\$3.9 million), which will leave the portfolio in early 2004 as their final reports are published. The resulting portfolio profile will represent an increase in the number of the projects, but a decrease in the overall value of the portfolio. The funding level of the average ESMAP activity will be US\$216,000, compared to US\$257,000 at the end of 2002. This is the result of more fast-track activities (of less than US\$50,000) introduced into the portfolio during 2003 as ESMAP responded to clients' demand for funding available for just-in-time technical assistance activities.

The table below provides an overview of changes to the portfolio in 2003.

## PORTFOLIO PROFILE

The graphs on the previous pages indicate, the geographical distribution of the portfolio by

Table 4.1 Overview of Changes in Portfolio 2003	
	Number
Ongoing projects on January 1, 2003	110
Completed projects yet to be closed, as of January 1, 2003	28
New projects launched during 2003	44
Projects closed during 2003	(22)
Projects withdrawn during 2003	(1)
Completed projects yet to be closed, as of December 31, 2003	(35)
Portfolio as of December 31, 2003	124

amount of funding and number of projects. Projects in LAC continue to constitute a quarter of the portfolio by number of projects and a third by value. It remained the largest proportion in the portfolio.

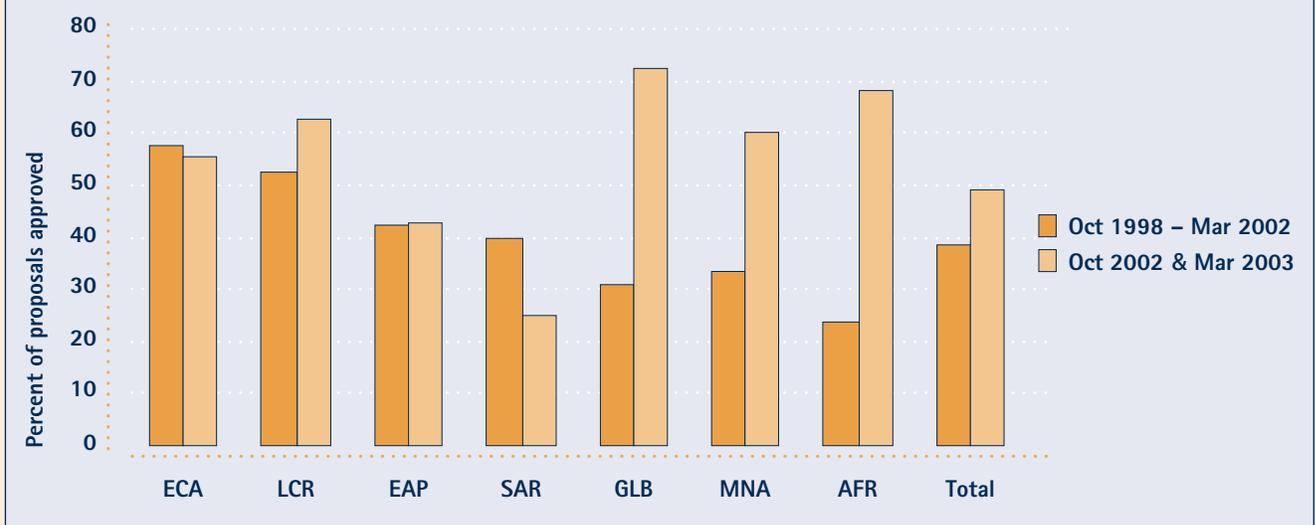
Africa went up by around 15% by both value and number. The region represents 24.4 percent of the total number of projects, and 18.7 percent of total funding. Projects in MENA also increased significantly, reflecting that this region is beginning to leverage ESMAP resources. In 2002, MENA projects represented less than 2 percent of the total, and more than doubled to 4.1 percent in 2003.

ESMAP's ECA portfolio went down by number and value. It now represents 7.3 percent of the total number of projects and 7.8 percent of funding.

Among the strategic priorities of ESMAP:

- The environment portfolio grew the most in 2003 although more in terms of value than by number of projects. It represents more than 40 percent of the portfolio by number and more than half the portfolio by value. The renewable energy, energy efficiency, and indoor air pollution business lines grew the most. While looking at this growth in ESMAP's environment portfolio, it is important to bear in mind that two Bolivia projects worth US\$3.9 million that are near closure are included in these figures. As these projects close in early 2004, the ESMAP portfolio will resume a balance among its three strategic areas.
- ESMAP's activities in the access/energy poverty portfolio reduced slightly by value and number. But ESMAP's most high profile activities during 2003 were in this sub-portfolio, particularly under the Global Village Energy Partnership (GVEP) business line.
- Market development represented 28.5 percent of total projects and 23.1 percent of total funding, which represents a decline in proportion from the previous year.

**Figure 4.1 Success Rate of Proposals by Region**



The increase in the portfolio from the end of 2002 to 2003 (from US\$28.3 million to US\$30.3 million) reflects a higher number of total proposals received, a higher success rate in these proposals qualifying for funding, and more efficient procedures in reviewing proposals.

Interest in ESMAP collaboration has increased greatly. During the last three Call for Proposals, an average of 38 proposals were received per call compared to 13 in the preceding three calls.

Since October 2002 the cycle time for processing proposals has been reduced from 6 months to 10 weeks.

In addition, as task managers became more engaged in the proposal process, more complete proposals—and higher approval rates—resulted. The increase in projects in Africa, MENA, and in global projects, as shown in the chart below, illustrates how this increase translates into a broader reaching portfolio.

## STREAMLINING THE ESMAP PROCESS

ESMAP conducted an analysis of the 57 proposals approved between 1998 and 2002. As the chart shows, an average of six months used to elapse

between submission of a proposal, approval, and the first allocation of funds. That number has been reduced to 10 weeks—less than half—with a further reduction of between 8 and 10 weeks in the offing.

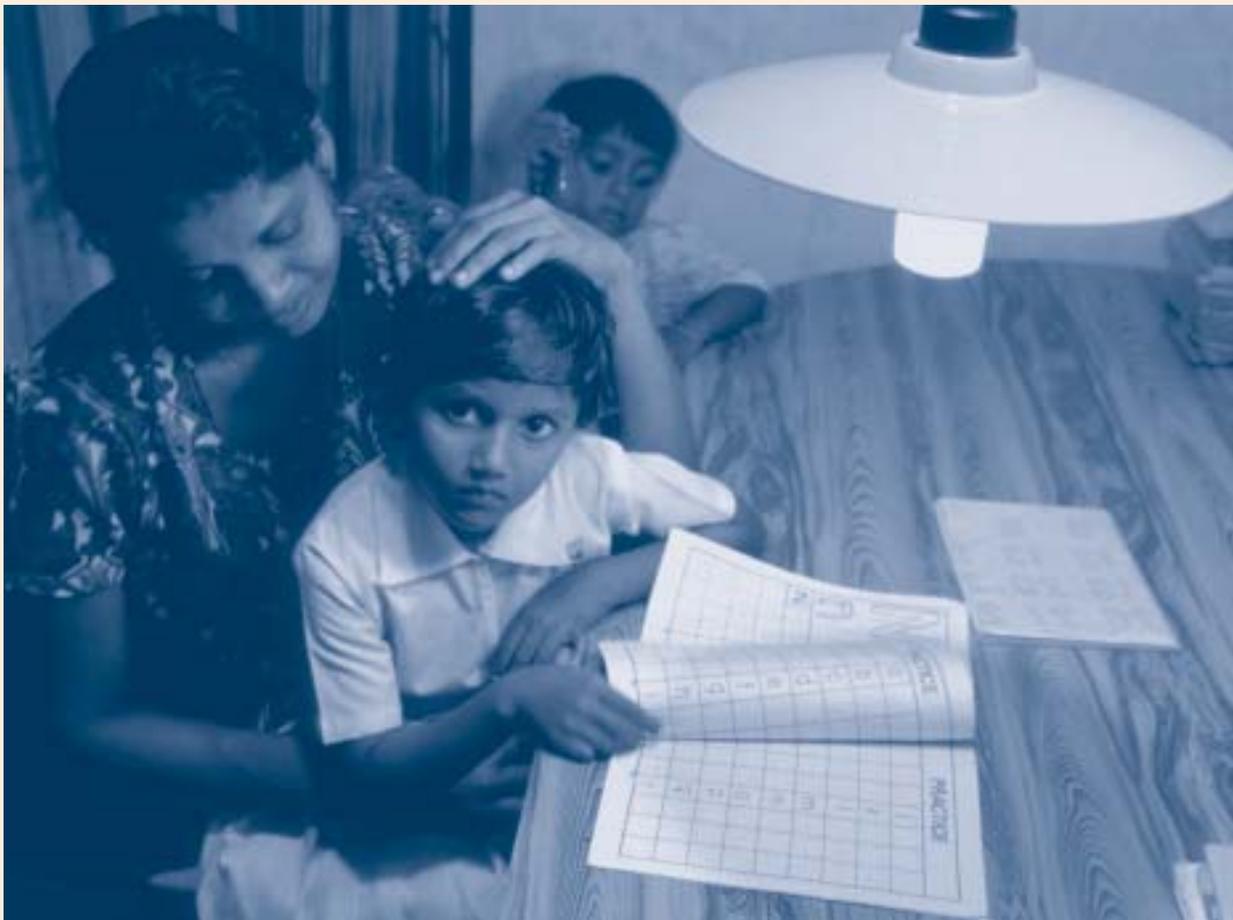
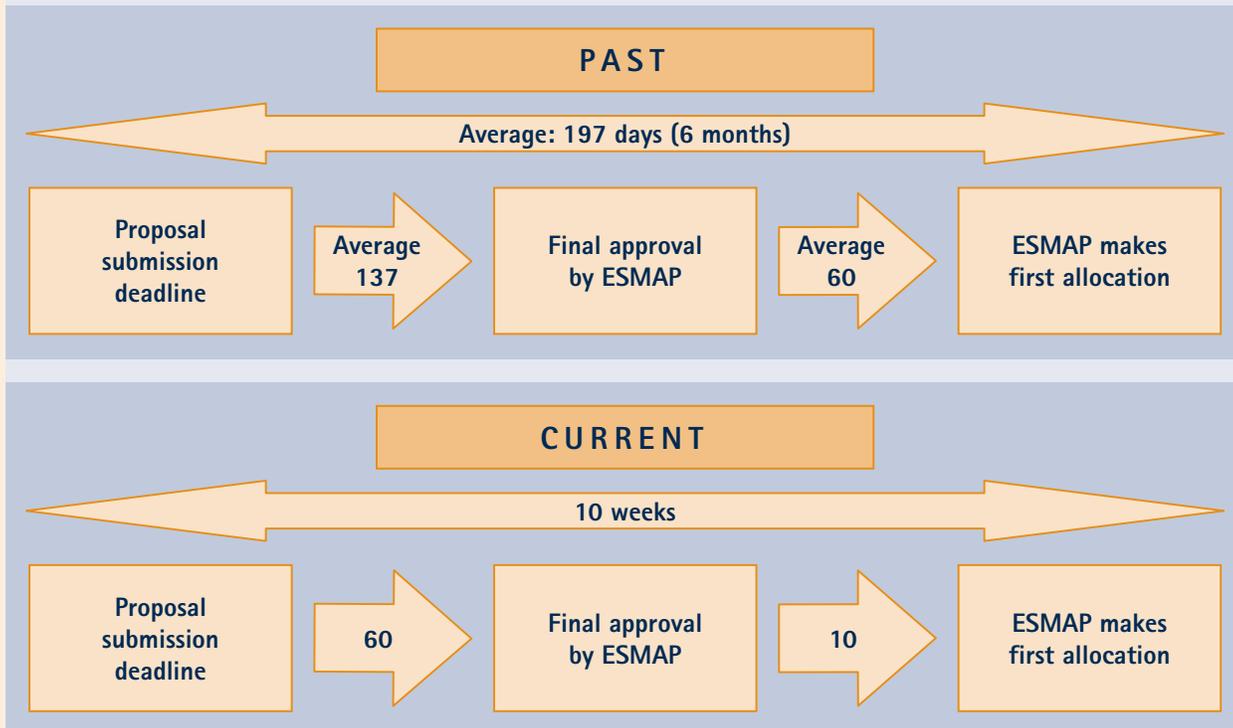
The ESMAP proposal-to-allocation cycle now lasts half as long because of:

- Much closer follow-up of every proposal
- Strict adherence to announced schedule
- More systematic interface with donors
- Introduction of a Fast-Track Window for projects <\$50,000. Only a two-page concept note required and the entire procurement process is quicker.

The Fast-Track Window Progress was introduced in 2002 and made use throughout 2003 on a rolling basis. Since announcement of the Window, 29 fast-track activities have entered portfolio

Most were just-in-time requests for knowledge transactions (such as, dissemination seminars and workshops) or specific studies needed to help policymakers with immediate decisions. Ten have already concluded, including a revenue management seminar in Chad and an analysis of Brazil's power rationing system.

Figure 4.2 ESMAP Proposal to Allocation Cycle





# ESMAP PORTFOLIO HIGHLIGHTS AND IMPACTS

5

# ESMAP PORTFOLIO HIGHLIGHTS AND IMPACTS

ESMAP funds contribute to developing energy solutions on a country or regional level. Often part of a larger project or study, ESMAP activities in 2003 provided critical household-level data in Ghana and India; presented the implications of various environmental policy options in Turkey; and brought together key stakeholders in Brazil, among other efforts. ESMAP targets its support in three, overlapping areas: overcoming the challenges of increasing access to modern energy services, improving the environmental sustainability of these services, and developing markets that can provide these services in a cost-effective and equitable manner. Through studies, pilot projects, conference, and other activities described below, ESMAP has sought to enrich the global knowledge base on these issues.

This section presents a sampling of ESMAP-funded activities that are at different stages of completion. In many, if not most cases, work funded in a specific country or region has broader applicability.

## ACCESS: HARNESSING MODERN ENERGY TO REDUCE POVERTY

The Millennium Development Goals, the 2002 World Summit on Sustainable Development, and other international initiatives have helped crystallize a global commitment to alleviate poverty. Access to modern energy services will significantly assist in meeting this commitment. Although progress has been made, the needs remain great and still unfulfilled. At least 1.6 billion people worldwide consume no electricity at all; in Sub-Saharan Africa, less than 10 percent have access to electricity. Cooking and heating with wood and other biomass materials requires up to several hours each day to collect fuel. Because that task falls disproportionately on women and children, time is taken away from income-producing activities, education, or leisure.

During 2003, ESMAP's efforts to increase access to modern energy services included three areas:

- Rural Energy/Electrification: Providing services to those without modern energy services
- Gender: Empowering Women in Energy Practice
- The Global Village Energy Partnership.

### Rural Energy/Electrification: Providing services to those without modern energy services

Although electricity and other services have become more available in rural areas in the last decade, millions of households remain without it. Often, the per-unit cost of obtaining energy through batteries or liquefied petroleum gas represents a disproportionately high burden to low-income households. In recent years, the need to extend access has occurred in many countries against a backdrop of sector reform. New models have evolved to ensure that the private sector continue (or initiate) these services to locations that are less commercially viable. New opportunities are emerging, particularly for smaller companies or locally based organizations, to fill an important need.

In the projects described below, ESMAP support has advanced knowledge on such issues as:

- Making services available to remote communities when these small-scale operations do not appear commercially attractive;
- Developing a national rural electrification strategy that aims for universal access at a given point in the future;
- Understanding how off-grid services are affected by different countries' regulatory frameworks and how to keep these services operational.

In the Philippines, the *Rural Electrification Regulation Framework* project is designed to support the government's strategy to achieve full electrification as it opens the market to the private sector. The government has stated that it wants to achieve full electrification of the districts (Barangay) by 2006 and full electrification of households by 2017. About 30 million people live

in homes without a modern energy connection. The Electricity Regulatory Commission had asked the Department of Energy to propose a regulatory framework and a means to make the electricity cooperatives financially viable. Thus, the ESMAP project is contributing toward developing a framework for private sector participation in the management of electricity cooperatives as well as regulatory framework that incorporates some form of competitively awarded, output-based subsidies or tariffs, while also providing the predictability and transparency required by investors. The proposed approach is to define outputs (such as connections and level of service in the case of the new isolated systems) and a minimal tariff, commit subsidy funds payable on achieving those outputs, and use that cash flow component, backed by a credible regulatory framework, to leverage private sector investments. Moreover, the framework is useful to other countries that are considering or already imple-

menting output-based approaches to small-scale power system development.

Likewise, the *Brazil Rural Electrification Strategy* provided recommendations to substantially expand electric services to the poor in rural areas, using efficient technologies (such as off-grid energy solutions for remote areas to meet local demand patterns in a more flexible way) and innovative public-private partnerships. An initial draft was discussed at a stakeholder workshop, then revised and shared with the government, donors, and a variety of key stakeholders (See Box 5.1).

Building on the experience in Brazil in rural electrification, as well as in Argentina, Bolivia, and Nicaragua, ESMAP is also funding a comparative assessment of regulations for servicing the poor entitled *Regulatory Issues of Off-Grid Energy Service Delivery as Part of Rural Electrification*

#### Box 5.1 Brazil's National Rural Electrification Strategy

The new Government of Brazil has recently declared universal access to electricity services as a key element of its poverty alleviation strategy. Although significant progress in rural electrification was made over the last decade (more than 600,000 users connected in the past three years), past efforts have largely focused on the relatively easier-to-reach users and on traditional grid extension. The ambitious new national program sets concrete targets for all distribution companies, aiming at universal access well before 2010 by connectible about 2.5 million additional households.

The ESMAP-funded Background Study for a National Rural Electrification Strategy analyzed rural electrification issues and made 15 recommendations that would facilitate the government meeting its goals in an efficient and sustainable way, several of which have been adopted. A stakeholder workshop brought together 60 high-level stakeholders to identify and discuss barriers to rural electrification and options to overcome them. The ESMAP study was coordinated closely with the Brazilian government during all stages. Draft versions of the study have been used by several donors for their rural electrification projects and the study has helped the Ministry of Mines and Energy define a series of follow-up activities, including a preliminary energy-poverty reduction action plan which will support the implementation of the Global Village Energy Partnership goal to scale-up energy solutions and two Project Concept Notes for World Bank financing of new rural energy projects.

*Contributed by Kilian Reiche*

*Strategies.* The intent is to learn whether existing regulations on quality of service, pricing, and other issues meet the needs, particularly for off-grid projects in rural areas. The assessment is also identifying the various technologies in use in rural areas—from extension of the existing grid, to the development of mini-grids, battery recharging centers, and single-user approaches—and how regulations are addressing each technology. Several cross-cutting themes have been identified, such as lowering costs of regulation in remote off-grid areas through user and provider participation; synergies with output-based verification schemes, and the use of ICT tools such as computers.

### **Gender: Empowering Women in Energy Practice**

Energy, both modern and traditional, has a profound impact on the economic and social roles of women and men. In communities without modern services, women and girls are tasked with collecting wood or other biomass materials, cooking, and other daily responsibilities. The amount of time spent on these tasks—and thus not on income-producing, educational, or leisure pursuits—is considerable. In addition, the impact of heavy load and of indoor air pollution from inefficient biomass use on the health of women and children has become a major public health issue in developing countries.

As described below, ESMAP-financed activities focused on such issues as:

- The impact of current energy practices on women's lives;
- The positive and negative effects of mining operations on the social, environmental, and economic lives of women and men in local communities;
- The rationale for integrating gender into energy programs and ways to accomplish that.

Energy has often been cited as having important consequences for women in developing countries.

However, there has been relatively little quantitative evidence to support these assumptions. *The Impact of Energy on Women's Lives in Rural India* provides important quantitative support through a survey of 5,000 households in six Indian states (See Box 5.2). The bottom line: access to improved energy services in the form of biomass stoves, petroleum fuels, and household electrification makes a tremendous difference in how women are able to organize their time. The survey also showed that in some instances, more modern services are locally available but households are reluctant to spend the money to “move up” the energy ladder. Cultural perceptions that see wood and other biomass as cheap, if not free, combined with a lack of appreciation of the value of women's labor involved in collecting these materials, explain some of this reluctance.

At the same time, it is important to keep in mind the positive and negative implications of modern services on the fabric of a community. A participant questionnaire and subsequent discussions from the *Women in Mining Conference*, held in Papua New Guinea in August 2003, confirmed some of the benefits that have accrued to women from modern mining operations, but, at the same time, highlighted negative consequences that require attention (See Box 5.3). ESMAP supported the participation of women from South Africa, Nigeria, India, Fiji, and Romania to attend the conference to share their experiences and insights. A Vision Statement that emerged from the Conference articulated a “future of peace and prosperity” built on economic and social empowerment, a role for artisanal and small-scale mining, and well-being in terms of health and education, as well as safety and security.

*Integrating Gender in Energy Provision* examined energy projects in Bangladesh from a gender perspective to move from a conceptual acknowledgment of the importance of gender to on-the-ground ways to make that happen. The team involved in the study makes three key recommendations:

## Box 5.2 Impact of Energy on Women's Lives

When analyzed from a gender perspective, data from six Indian states produced originally for a Rural Energy Strategy Paper held useful insights on how energy use impacts women's lives. The fieldwork consisted of a household energy survey of more than 5,000 households in 180 villages, surveys of commercial and small-scale industrial establishments, a survey of renewable energy manufacturers, and an assessment of rural biomass resources.

The study highlighted the tremendous difference that access to improved energy sources in the form of biomass stoves, petroleum fuels and household electrification makes in the lives of women. For example:

- Women read more in households with electricity; conversely, in households without electricity, regardless of income and class, women rarely read. Given the connection between women's education and the education and health of their children, this difference holds significance for the well-being of the next generation.
- Electricity frees up time for work and leisure. Time spent in fuel collection and food preparation goes down, saving about an hour a day on average. Since electricity is not used directly for cooking in rural India, having electricity in the household must indirectly affect the time spent preparing food and cooking. For instance, with light in the evening hours, women may be able to use their time more efficiently in food preparation.
- Regardless of income and class, biomass fuels and traditional stoves are mostly used in the areas surveyed. Thus, indoor air pollution remains a significant health concern, despite the increased availability of modern fuels. Fuel substitution, improved stoves, and other ways to mitigate biomass' polluting effects need to be encouraged.

This study and a 2002 ESMAP-funded study on India Household Energy, Indoor Air Pollution, and Health have contributed to a Clean Energy Project to be undertaken in India.

*Contributed by Douglas Barnes and Mitali Sen*



- Enhance understanding of the direct benefits from addressing gender in energy programs through more sex-disaggregated data and analysis, gender-sensitive monitoring and evaluation, and targeting women for energy services.
- Promote women's participation in energy activities by raising policymakers and energy specialists' awareness of these links and providing education on energy technologies with the needs of female and male energy end users in mind.
- Provide women with opportunities to gain technical and managerial knowledge and play key roles in commercial energy provision and pro-

### Box 5.3 Impact of Mining on Women

The benefits of mining oil, gas, and other resources tend to accrue to men, who are usually the ones who earn wages and have access to specialized training, while women and children are more likely to bear the costs. Looking beyond financial benefits, a range of social and cultural impacts also accompany the introduction of mining operations into local communities.

The Women in Mining Conference, in Papua New Guinea in August 2003, brought together approximately 180 participants, 90 percent of whom were women. Most were from PNG's mining communities, joined by government and industry representatives, as well as by about 30 attendees from other countries.

A questionnaire was used to ask participants to identify the positive and negative aspects of mining on community life, and specifically on women.

The most commonly cited negative impact was the increase in violence, alcoholism, prostitution and sexual abuse (reported by about 65 percent of those questioned), followed by social and family disruption. In contrast, between 60 and 80 percent of the respondents also noted that access to education, employment opportunities, and health and community services were positive impacts.

Four main areas were identified:

- **Economic empowerment:** Mining can empower women through sharing in the economic benefits, primarily through direct or indirect employment, infrastructure improvements, and various incentives, but too often the benefits flow largely to the men of the community.
- **Social empowerment:** Mining can empower women by including them in key decision making and consultation bodies at all stages of mine life; however, history shows that all too often these groups are dominated or solely composed of men.
- **Health and education:** In PNG, participants reported that mining's greatest benefits have been in the areas of improved health services and access to education. However, there are also negative health impacts, such as damage from pollution and the inflow of modern foods.
- **Safety and security:** Many communities report a significant increase in social strife, including a rise in domestic violence and alcoholism. They also report a breakdown in traditional community structures.

The conference led to the creation of a Coordinating Committee, a group of 20 women who built on the findings and suggested strategies to develop specific *goals and objectives*.

*Contributed by John Strongman*

mote more decentralized systems of energy services provision to overcome entry barriers in the traditional energy sector.

As the team noted, energy-related development interventions and women's empowerment are both

recognized as crucial to poverty reduction efforts and sustainable development. The case for gender and energy as a nexus in poverty alleviation is less developed and has only recently gained substantial attention. Increasing the visibility of this nexus to a level that can affect policy and pro-

grams will have far-reaching implications for development and the reduction of poverty.

The absence of a gender mainstreaming strategy in the energy sector is attributed to a number of factors, such as a focus on economic performance and production, the technical and male-dominated nature of the energy sector, and the “invisibility” of benefits from energy. Nevertheless, a growing body of networks, organizations, and researchers has started to draw the attention of energy practitioners and policymakers to the incorporation of gender concerns into energy work.

### The Global Village Energy Partnership

The *Global Village Energy Partnership* (GVEP) was successfully launched at the World Summit on Sustainable Development in 2002, with the goal of increasing availability and improving the use of modern energy services for economic growth and poverty reduction, in rural, peri-urban, and urban areas. In addition to hosting the Technical Secretariat, ESMAP’s support to the implementation of the Partnership in 2003 consisted country-level activities; leading the implementation of the knowledge management and monitoring and evaluation workprogram of the Technical Secretariat; and implementing knowledge generation (Southern Africa) and pilot projects (Bangladesh, Philippines).

More than 250 organizations have committed to working collectively to increase modern energy access by signing GVEP’s Statement of Principles. They include NGOs, private sector firms, government agencies, and multilateral organizations.

GVEP conducts activities under five service lines:

- Action plans that include goals for service delivery, policy framework, demand assessment and priorities, supply and investment options. Six regional activities took place, and in-country follow-up began in eight countries in Latin America and four in Africa.

- Capacity development for entrepreneurs, financial institutions, consumer groups, and technicians. In 2003, GVEP funded a South Asia Practitioners Workshop, which brought together practitioners to share experiences and build networks.
- Funding facilitation including registry of funding sources, training for financial intermediaries, and pre-investment facilities.
- Knowledge exchange encompassing models of actions plans, projects, and financial mechanisms; lessons learned; toolkits; web site, radio and TV programs; paper information dissemination; a network of trained and knowledgeable individuals; and a help/advisory desk.
- Results and impact monitoring including public accountability for results, and assessment development impact.

As Part of the Country-Level Activities, ESMAP took the lead in designing and conducting with UNDP and the World Bank two regional workshops in Africa on Energy and Poverty Reduction (Cameroon and Senegal)(see Box 5.4), and with UNDP, the World Bank, the Organization of American States, Germany and USAID, a GVEP-LAC Conference, in Bolivia, followed by a regional workshop for eight countries. These events had two key objectives:

1. Combining plenary presentations and sectoral workgroup sessions to enable participants to build upon global knowledge, and exchange information on the best practices and lessons learned in effective energy delivery and the integration of energy in other sectors for improving community services and productive uses.
2. To serve as a working forum for official delegations from several GVEP partner countries, to facilitate the preparation of National Action Plans.

ESMAP also took the lead with the World Bank and Winrock International in designing and conducting the *South Asia Practitioners’ Workshop*. The workshop focused on ways to scale up and replicate off-grid and mini-grid service provision

#### Box 5.4 GVEP: Exchanging Experiences, Building Networks and Preparing Action Programs

Regional energy-poverty workshops offer the opportunity for representatives from diverse sectors to gain a better understanding of the linkages between energy services and poverty reduction in their countries, gain knowledge of methodologies to measure impacts of energy policy, and gain exposure to lessons learned from existing programs. After a successful initial workshop in Addis Ababa at the end of 2002, regional workshops in 2003 were held in Senegal, Cameroon, and Bolivia. Country level workshops were also held in India, Bolivia, Mexico, South Africa and Sri Lanka.

Each country's delegation consisted of energy specialists and those from other sectors, including both government and civil society representatives. The energy specialists gained a better understanding of how energy is used throughout the economy, while those in other sectors learned more about what modern energy services could contribute to reaching their goals. In addition to cross-pollination among representatives within each country, the workshop allowed time for sectoral focus or discussion across national boundaries. Each country delegation drafted an action plan to use for follow-up work. ESMAP published the proceeding of the regional workshops.

One of the most positive aspects of the workshops, according the participants, was the opportunity to work across sectors, an activity often found difficult to undertake even at the country level due to the lack of communication among sectors on common objectives.

*Contributed by Laurent Durix and Ghislaine Kieffer*

in the region. Fifty-five energy practitioners came together in Sri Lanka to exchange lessons learned through many years of field experience and to assemble best practices in tackling the challenge of scaling up rural energy services (See Box 5.5). Field visits to two community micro-hydro projects and a solar photovoltaic dealership in Sri Lanka introduced the participants to how Sri Lanka is implementing off-grid renewable electricity services using NGOs, the private sector with commercial financing, and how electricity access had improved people's lives.

Other country-level activities included an Action Planning Project in Senegal, which is leading to a demand-driven assessment of energy needs, in particular for electricity, from the productive and social sectors. The results are being integrated into the design of a rural electrification investment program which will be submitted for financing to the World Bank. New implementation mechanism

are being designed, including the introduction of output-based targets for the social sectors in the design of rural electrification concessions. Similar action-planning projects are being designed for Burkina Faso, Cameroon, Ghana, Niger, in Africa; Bolivia, Brazil, Guatemala, Honduras, Mexico and other countries, in Latin America. This work is being carried out in cooperation with the UNDP, the World Bank and other donors.

#### **ENVIRONMENTAL SUSTAINABILITY: ENERGY WITHIN THE ECOSYSTEM**

The connection between energy and environment is a second essential component in the ESMAP Business Plan for 2002-2004. ESMAP's overall objective is to address the energy and environment nexus at the local, regional, and global levels as related to energy production, transportation, and consumption. In 2003, ESMAP focused on the following areas:

## Box 5.5 Looking Ahead in South Asia

South Asia has emerged as a region where the private sector, NGOs, microfinance institutions, and commercial banks have taken a leading role in providing off-grid electricity services to rural customers. Hundreds of thousands of rural people in the region are now benefiting from off-grid electricity services and tens of thousands are employed in providing such services. Despite these successes, few of the practitioners have had the opportunity to meet to exchange lessons that have learned over many years or to build relationships with each other. The South Asia Village Energy Practitioners Workshop permitted them, as well as colleagues from other regions, to meet in Colombo, Sri Lanka, in June 2003.

Several months before the Workshop, an online consultation was held to identify topics of greatest relevance to participants. Participants also used this mechanism to submit project profiles showcasing good practices.

Over a period of three days, the participants shared lessons and current best practices for renewable energy and other technologies, and also built relationships. The participants also made a number of recommendations, recognizing that no single model or approach would be applicable to all countries. Among the recommendations were the following:

- **Consumer Diversity:** Poorer consumers must not be overlooked by projects and programs that see to increase energy access to rural areas. Appropriately sized and priced products, effective fee-for-service approaches, and associated risk mitigation measures for providers can encourage service to this market.
- **Scale-up:** A diversity of applications, particularly for productive uses and livelihood improvements, must be supported. Thus it is important to understand the structure of demand and respond to it—rather than have preconceived notions of what rural consumers need.
- **Capacity of service providers:** To increase the capacity and number of service providers, programs are needed to address entrepreneurship, as well as issues of investment and working capital for service providers.
- **Donor Code of Conduct:** Participants urged that donors avoid “technology dumping” projects in favor of broader programs that strengthen local capacity to deliver affordable and sustainable services.
- **Financing:** Financing for pre-investment activities, investments, working capital, and consumer financing is essential. Rural energy funds financed through tax revenues with specific provisions for subsidizing the poorest are also needed.

Subsequent to the conference, GVEP is developing a Practitioners Compendium, a listserv, and otherwise facilitating knowledge sharing and dissemination. ESAMP also issued the Proceedings of the Workshop in November 2003 (ESMAP Formal Report 268/03).

*Contributed by Anil Cabraal*

- Renewable energy
- Energy efficiency
- Energy and Environment Reviews
- Urban air quality

In addition, ESMAP continues to provide intellectual leadership in indoor air pollution, and work to mitigate environment and social impacts of fossil fuels.

## Renewable Energy

Solar photovoltaic systems, wind power, micro-hydro, biomass energy, and other renewable technologies hold promise for meeting energy needs in an environmentally sustainable manner.

In 2003, ESMAP support in the area of renewable energy focused on such issues as:

- Assisting client country governments in developing Renewable Energy Policies and Action Plans; and
- Demonstrating innovative financing and institutional mechanisms to deliver renewable energy services through pilot activities.

Renewable energy, particularly hydro and solar power, holds great promise in Cambodia, where consumers in rural areas now pay exorbitant costs for diesel and battery power, if they have these services at all. Through the *Cambodia Renewable Energy Action Plan (REAP)*, ESMAP funded an activity to prepare and promote a three-phased, ten-year plan that builds on an approach used in China and Vietnam and is designed to promote renewable energy use.

Stakeholder consultations around the REAP identified the need for the establishment of a Rural Electrification Fund, which has gained wide acceptance. IDA and GEF will support the Fund; this commitment leveraged significant additional funding from the private sector.

In addition, ESMAP continues to assist the government of Nicaragua and Mexico in developing

renewable energy policies and strategies, which provided key inputs into World Bank/GEF projects in these two countries. ESMAP is also assisting two cities in China in developing voluntary green electricity schemes, linked to the Beijing Olympics in 2008 and Shanghai 2010 World Expo.

In Ecuador, pico-hydro turbines are being piloted as a low-cost source of electricity through a project entitled *Stimulating the Market for Family-Hydro for Low-Income Households in Ecuador*. These are turbines that are small and inexpensive enough to be used by a single household. The project has supported installation of 30 such turbines (which were imported from Vietnam) in different locations, as well as training engineers in how to install and maintain them. A Business Opportunities workshop will be held in 2004, and the benefits and impacts of the turbines will be assessed. The ultimate objective is to create a market serving tens of thousands of households in Ecuador and elsewhere within five years.

Furthermore, ESMAP continues to pilot productive use applications in Honduras – solar power for ICT applications in schools, and the Philippines–micro-hydro for ice-making businesses.

## Energy Efficiency

Improving energy efficiency can often be achieved using low-cost, commercial technologies with a short payback period on the investment. Promoting energy efficiency is a highly cost-effective measure and offers significant opportunities to reduce both urban air pollution and greenhouse gas emissions. Improving energy efficiency also contributes to poverty reduction.

In 2003, ESMAP support toward increasing energy efficiency included:

- Developing a market-based pro-poor heating tariff regime to encourage energy conservation in urban heating; and
- Exploring options to heat buildings in small cities and towns through distributed heating systems.

In China, energy efficiency is an issue in the heating of urban residential and commercial buildings, which consume 50 to 100 percent more energy than buildings in comparable climates in Europe and North America. The current pricing scheme does not provide the incentive to seek such efficiency enhancing measures such as better insulation or conservation measures.

ESMAP is funding a project in close partnership with the Ministry of Construction and the Tianjin Municipal Construction Commission on the *Development of Pro-poor National Heat Pricing and Billing Policy*. Knowledge transfer from similar projects in Eastern Europe and Central Asia is being used to demonstrate the applicability of a two-part tariff regime.

Under the current system, heat is paid by employers, not users, and payment is based on heated floor area rather than on consumption. Only with major integrated heat reforms will consumers have proper incentives to use heat wisely, as well as garner the benefits of more efficient use. At the same time, there is a need to enforce the existing building energy efficiency standards for all new residential buildings in the heating zones, and to spur the development of new designs, building materials, and construction practices needed to make a difference in energy efficiency.

To address both of these needs, a pricing methodology and billing option is being field-tested and shaped into a reform plan in Tianjin City. The activity is part of a multi-year package of assistance from the World Bank/GEF. The Government has placed a high priority on this issue, and the partnerships with Chinese counterparts have been particularly strong. It is expected that the work in Tianjin will lead to national price reform strategies.

An ESMAP-funded activity in Lithuania is focusing on small cities and towns, where existing centralized district heating systems are often not economically or environmentally attractive. In Lithuania, as in other countries, private sector participation and new distributed technologies

represent changes to the status quo. The objective of the *Heating Supply to Small Cities/Towns* study is to provide consumers in eight Lithuanian towns and cities access to more efficient and affordable heat through determining the least cost method of delivering heat to them, building on the work undertaken for larger cities; assessing the potential to decrease fuel costs and environmental impacts of heating; determining the preferred ownership arrangements for heating systems in small cities and town; and preparing specific pilot schemes to test these hypotheses. While there are many experiences and analyses from which to draw information, including a related ESMAP-financed activity in Armenia and Kazakhstan, the work in Lithuania fills a gap in the existing knowledge base because of its emphasis on smaller population centers.

In addition, ESMAP started two new activities to demonstrate innovative financing mechanisms that facilitate aggregating small-scale energy efficiency projects for financing in Mexico and Poland.

## EERs

Energy and Environment Reviews (EERs) provide a broad review of the environmental impacts of energy supply and use. Conducted jointly by specialists in the energy and environment sectors in specific countries, EERs examine the local, regional and global impacts of energy production and consumption. Outputs of these reviews include (1) a diagnosis and analysis of issues related to the exploitation of fossil and other fuels; and (2) strategies and options for addressing these issues.

Two EERs illustrate how policymakers can use the information to make policy and budgetary decisions. The EERs help:

- Providing critical information on various policy options and trade-offs at the national level; and
- Prioritizing budgets at the state level.

In *Turkey*, a series of studies was carried out between December 2000 and June 2002 that provided policymakers with critical information to evaluate energy issues and assess alternative policy options. A synthesis of these separate studies serves as tool for policymakers looking at the larger picture. In addition to initiating such reforms as privatization of the power sector and the introduction of natural gas and other fuels, Turkey's interest in becoming a member of the European Union means that it must revise its environmental regulations according to the EU's Fifth Environmental Action Plan. The EER laid out some of the issues and decisions facing policymakers to accomplish this. For example, an analysis of technologies to combat emissions of SO<sub>2</sub> spotlighted how much it would cost to achieve certain emission targets in different ways. This information then helps decide on the best practices (such as tighter emission standards, new technologies, or emissions trading) to reach these targets.

The EER used demand-focused energy models to conduct scenario analyses of various options, such as greater use of natural gas, more efficient and cleaner use of lignite (a local resource), or use of imported coal. A workshop brought together all the stakeholders to review the report and consider recommendations to policymakers. Some of the key questions addressed are:

- What will be the costs and benefits if Turkey adopts EU legislation on emissions from large-combustion plants? Cogeneration and demand-side management were both shown to contributing to the meeting of an emissions target.
- Do clean-coal technologies offer a cost-effective alternative to natural gas or renewable energy as a way to achieve a cleaner environment and reduce greenhouse gas emissions? The study found that rehabilitation of existing plants is a "win-win" option that should be pursued.
- Should EU legislation on the sulfur content of fuel oils be introduced, and what would be the consequences? The study was able to assign

costs to optimizing refineries and concluded that desulfurization of fuel and heating oil should be coupled with use of low sulfur crude oil by refineries, substitution of fuel and heating oil by natural gas, and import of low-sulfur products.

- What are the costs and benefits of energy efficiency programs? A program of DSM/energy conservation measures would have a major impact on energy demand, imports, and emissions.
- What are the implications for the environment, cost, and security of the energy supply if Turkey constrains the use of natural gas? A "reference scenario" assumed an increase in the use of natural gas, although the review acknowledged situations where this demand might not increase. If Turkey sought to constrain use of natural gas, an increase in greenhouse gas emission levels and other pollutants would result, according to the review.
- What are cost-effective means to reduce greenhouse gas emissions and meet Kyoto targets? The strategies analyzed as "win-win" (that is, achieving reductions without a consequent increase in cost) included wider use of natural gas, demand-side management, and cogeneration and improved technical efficiency of the power sector.

In India, EERs were conducted in two states culminating in *Environmental Issue for the Power Sector: Long-Term Impacts and Policy Options for Karnataka and Rajasthan*. These studies built on an analytical tool first used in the mid-1990s in Bihar and Andhra Pradesh. A capacity-building exercise was carried out on how to use the tool. Steering/advisory committees in each state were responsible for guiding and coordinating the efforts. With both generalizable and specific findings (see Box 5.6), the EER reinforced that prior planning for environmental compliance is much less expensive than dealing with it after the fact. Policymakers received specific and quantitative information that reform will benefit the environment, and could use that information to communicate with other stakeholders.

## Box 5.6 The Role of Environment in Power Sector Planning

The EERs conducted in Karnataka and Rajasthan made use of an analytical tool that helps determine the least-cost configuration for any given scenario in the power sector, then estimates their environmental impact. Looking simultaneously at the Least Cost Plan and its quantified environmental impact allows policymakers to see a complete picture in considering various options.

A baseline scenario is used, on which is layered various options such as demand-side management, renewable energy technologies, or developing a hydro program (issues in Rajasthan and Karnataka respectively). Major findings were:

- Power sector reform is the single most important measure to take in the mitigation of the environmental impacts of the power sector. Once financially viable, utilities can increase their compliance with environmental regulations.
- The difference in emissions (and damage costs) between reform and stalled reform far exceeds the differences between any other options.
- Tariff reform is the second most important policy option for environmental sustainability.
- Demand-side management is a win-win.
- The imperative of meeting peaking power requirements will become the main issue over the long term.
- Consumptive water use for thermal generation is a major issue in both states, giving a further advantage to gas combined cycle. Small hydro is win-win, while with adequate safeguards and careful citing, large hydro can also be win-win, especially in the case of adding powerhouses to existing irrigation projects (as in the upper Krishna scheme in Karnataka).
- Concern that the open-access provisions of the 2003 Electricity Act will trigger a shift to industrial self-generation are not founded, as long as the government maintains its present policy of linking domestic diesel prices to world market prices.

*Contributed by Mudassar Imran and Peter Meiers*

## Urban Air Quality

Urban air pollution has significant negative health impacts. Epidemiological studies have confirmed a direct association between fine particulates, one of the worst ambient air pollutants, and mortality. Lead content in blood has also been correlated with children's behavior and IQ level. Again, the poor are most vulnerable. Evidence shows that there is a direct link between urban air quality and national income levels. In industrialized countries, urban air quality has been significantly improved over the past four decades due to improved technologies and more stringent regulations. In the developing world, however, urban

air pollution remains a huge problem. ESMAP's strategy in Urban Air Quality focuses on the worst ambient air pollutants—fine particulates, lead, sulfur, and nitrogen oxides, particularly in the transport sector.

Through the Clean Air Initiative, the phase-out of leaded gasoline has become a top priority as a way to improve urban air quality. In June 2001 the Clean Air Initiative organized a pan-African regional conference in Dakar, Senegal, where 25 countries signed a declaration setting the date of 2005 for the complete elimination of lead from gasoline in sub-Saharan Africa. Following the successes of ESMAP projects in phasing out



leaded gasoline in Asia, Central Asia, Latin America and Caribbean, and the Middle East and North Africa regions, ESMAP and Africaclean have focused on the *Lead Phase-out Initiative in Africa*, emphasizing four oil-importing countries: Ethiopia, Mali, Mauritania, and Tanzania.

By the end of 2003, Ethiopia and Mauritania announced a ban on the import of leaded gasoline, while Tanzania was phasing in unleaded gasoline and Mali was exploring its options to reduce fuel adulteration while awaiting changes from refineries along the Atlantic coast that supply its market.

The project also provided lessons learned valid for other SSA markets. It was confirmed that old cars can use unleaded gasoline without problem, and that prices do not increase due to investments or new costs in distribution and marketing when switching.

In addition to above areas, ESMAP successfully organized an event at the Bank to share the expe-

rience and lessons learned in ESMAP indoor air pollution projects in five countries (China, Guatemala, India, Mongolia, and Nicaragua). The workshop generated a great deal of interests among energy, environment, and health staff in indoor air pollution in developing countries.

## **MARKETS: DEVELOPING SUSTAINABLE MARKETS IN AN ERA OF REFORM**

Energy services must be accessible to all, and must be provided in an environmentally sustainable manner. Another critical element in the provision of modern energy services is market development, and this is the third area that ESMAP has identified as one in which its funding and support can be pivotal. This includes providing evidence about how and whether sector reform is assisting in poverty reduction, strengthening local private sector participation and public-private partnerships, as well as strengthening regulation and regulatory capacity.

### Box 5.7 Electricity Pricing and the Poor in Ghana

The pricing of electricity has repercussions at all levels: for the utilities that provide the service as well as the consumers who purchase it. The pricing of electricity has emerged as central to both the Ghana Poverty Reduction Strategy, to a Bank-supported PRSC, and to the political dialogue.

A multi-stakeholder Steering Committee has focused on two key policy issues: the impact of recent tariff increases, including the recent approval of automatic increases, on the poor and the effectiveness of an existing lifeline subsidy in protecting them from tariff hikes. With regard to the implementation of the lifeline tariff, a key question concerned its effectiveness when many lived in compound houses with shared meters. For the automatic tariff increase, an increasing reliance on thermal energy meant that the utility needed tariffs to better reflect its dollar-driven cost structures. For the regulator, existing rules pointed towards the need for public hearings prior to tariff increases and a desire to put pressure on the utility to improve its performance. The Ministry of Finance was interested in reducing the fiscal drain of subsidies to the utility. At the same time, electricity tariffs had been a hot topic in the press and there was concern among consumers that increasing tariffs were contributing to poverty. Thus, although automatic rate increases had been gazetted, in fact they have not been implemented because of underlying concerns about affordability, social impacts among some stakeholders, and already existing problems with nonpayment of electricity bills.

The analysis was divided into two phases: a first phase, which was to inform the ongoing policy dialogue, consists of a stakeholder analysis, exploiting existing studies, utility data and national household level surveys data, and complementing this with qualitative and some limited quantitative research to assess existing evidence on the impact of increasing tariffs and the effectiveness of the existing lifeline subsidies (a subsidy for those consumer less than 50 kWh per month) on the poor. Preliminary findings point to the following: unless there have been changes in the structure of poverty since the last national level income survey (GLSS), lifeline subsidies are not well targeted in urban areas, with a minimum of 55% of the lifeline subsidy going to non-poor households under the best of circumstances, but a surprising number of households below the poverty line with electricity in rural areas have access to electricity (20%).

Further, comparatively high levels of access to electricity in Ghana, with particular emphasis in recent years on expanded access in rural areas, poses challenges for maintaining affordable tariff levels. Qualitative research and key informant interviews revealed that one segment with the most resistance to the higher prices were small scale businesses, such as corn millers who would in turn raise their prices to farmers or turn towards illegal connections. In urban areas, increased prices did not always translate into revenue impacts as arrears were increasing over time. Further, financial analysis showed that a recent policy of allowing larger scale consumers to obtain electricity directly from the state-owned generator, VRA, would threaten the financial sustainability of the utility, and in particular its ability to continue to provide service to low-income groups. Final analysis, and policy recommendations will be discussed with the stakeholder committee in early 2004 and will feed into the PRSC and the GPRS discussions.

*Contributed by Sarah Keener*

## Impact of Reform on the Poor

On the one hand, there has been a push in many countries to reduce government subsidies to the energy sector by setting tariffs that more accurately reflect true costs. In many cases, despite the hope that low-income areas would benefit from reform, these reforms have in fact focused on serving better-off users.<sup>1</sup> On the other hand, poverty alleviation strategies call for extending access of these services to those with very limited means to pay. For example, in Lesotho, tariffs had not been raised for over a decade and do not allow for cost recovery, yet the government wants to increase the number of households with access to services from 30,000 to 500,000—thus requiring thoughtful analysis of the sustainability and viability over time. In its 2002-2004 Business Plan, ESMAP recognized that there is limited information to understand how reform affects the poor, and highlighted this topic as one needing further analysis. Filling this knowledge gap represents a need that ESMAP can meet.

In 2003, ESMAP built on theoretical work initiated in previous years on the impact of reform on the poor toward a focus on documenting these concerns so that policymakers can use the analyses in decision making. ESMAP-funded activities included:

- Gathering evidence-based information to set tariffs in the electricity sector with the needs of the poor in mind;
- Understanding how and where the poor purchase energy and how these supply points might be affected by reform; and
- Developing case studies that shed light on the positive and negative impacts of reform in individual countries.

An effort in Ghana to improve functioning of the electricity sector to reduce fiscal drain of the sector on the state budget, while protecting the poor and meeting goals of expanding access to elec-

tricity led ESMAP to fund *Poverty and Social Impact Analysis of Energy Sector Reform in Ghana* to clarify the policy dialogue on one of the key sub-issues in the sector: electricity pricing and the poor. (See Box 5.7) The pricing of electricity has emerged as central to both the Ghana Poverty Reduction Strategy, to a Bank-supported PRSC, and to the political dialogue. The high profile of the issue led to the creation of a multi-stakeholder Steering Committee including representatives of both the energy sector (Minister of Energy, utilities, regulator) as well as those outside of the sector but with a key interest in the policies to be addressed (the Ministry of Finance, those monitoring the GPRS, NGOs, and a consumer group) to monitor the analysis (including terms of reference, interim results, draft and final reports), inform cabinet, and develop policy recommendations emerging from this work.

Electricity sector reform is also at the top of the Government of Lesotho's economic agenda. The *Poverty and Social Impact of the Electricity Sector Reform* is providing guidance on the expected social impact of the proposed electricity sector reform and on institutional considerations that should be taken into account during reform implementation. In 2003, questionnaires and other survey instruments were developed and fine-tuned. The study focuses on the affordability and willingness to pay electricity charges at different tariff levels, as well as connection fees with various options for subsidization for different types of households, on usage of alternative sources of energy and its social implications, and on consumer perspectives on how to organize and improve services. Decision makers will be able to produce more precise estimates of demand projections and to reduce the risk resulting from planned network expansion. This will benefit residential consumers as risk reduction leads to lower tariffs.

*Energy Use, Energy Supply, Sector Reform, and the Poor* is being carried out in Ghana, as well as in Honduras, Botswana, and Senegal to look at the supply side of energy use in a different way—in terms of how the poor buy energy. Through

<sup>1</sup> Energy Services for the World's Poor, Energy and Development Report 2000.

small-scale household surveys conducted by local consultants in each of these countries, a fuller picture of how the poor use energy and the supply points where this energy is purchased will be produced. The local consultants are also producing studies on the energy supply chain in each of their countries. Individual country stakeholder workshops will be followed by a workshop to integrate the major findings in the four countries in 2004.

Complementing this quantitative work is another study based on a series of case studies on *Power Sector Reform: Assessing the Impact on Poor People and Influencing Policy Decisions*. In this activity, local researchers are looking at reform in their countries and determining the positive and negative impacts on the poor. They are preparing a series of case studies that are looking at such areas as price and access to electricity, quality of supply and service provision, improved social services, stimulation of economic development, and public sector finances.

### Strengthening Reform

In the 1990s, power sectors in both developed and developing countries have moved away from large public monopolies toward private ownership, with a range of options for the structure and ownership of the sector. However, since the late 1990s, private interest in the power sector has declined, with investors particularly retreating from developing countries.<sup>2</sup> ESMAP has provided advisory services and training in dealing with current realities, such as in the projects described below, where ESMAP support has focused on:

- Developing a strategy to make better use of natural gas for household and industrial energy use by involving the private sector;
- Exploring alternative ways black-outs or brown-outs to handle energy shortages; and
- Enabling regulators from developing countries and transition economies to learn about cur-

rent trends and strengthen their networking opportunities.

The *Strategy to Expand Gas Distribution and Utilization in Turkey* is looking at the possible expansion of natural gas usage. Most Turkish cities are heated with lignite briquettes, wood, and high sulfur petroleum fuels, resulting in a high degree of air pollution and associated respiratory problems. In order to reduce this problem, Turkey developed gas distribution systems that cover parts of Ankara, Bursa, Eskisehir, Istanbul, and Izmir. Although these only cover a small portion of the country, Turkey is importing more gas from Russia, Iran, and other countries than these cities use, and the state gas company has constructed an extensive transmission network across the country. To make better use of this network, the government wants to offer gas distribution concessions in 56 cities to the private sector. Although some cities have been tendered to the private sector, the obligations of the investors are not clear and there are concerns about the sustainability of the current approach. The *Strategy to Expand Gas Distribution and Utilization in Turkey* project, aims to assist the government in developing a strategy to determine the economic feasibility, refining their tendering framework to attract private sector interest, and develop appropriate public-private ownership and institutional structures for concessioning city gas distribution systems. In fact, other countries in South Eastern Europe are also trying to increase gas utilization in urban areas, and the work in Turkey can be used elsewhere.

Dealing with reduced supply, whether oil, hydro power, or other sources, can easily become a politicized issue. The reality is that cutting back on services—for example, through rolling black-outs, is so unpopular that governments wait until necessity absolutely forces the issue. Yet, when Brazil was faced with the need to ration energy because of dropping hydro levels in rivers, it chose a different route. An ESMAP study *Rationing Energy in a Rational Way* analyzed the Brazilian case. A market-based scheme was devel-

<sup>2</sup> Private Sector Development in the Electric Power Sector, World Bank Group, July 21, 2003.

oped. Each customer had a quota or consumption baseline, and had to pay the equivalent of market price if it exceeded the quota, therefore building-in a disincentive to over-consume. Conversely, users saved money if they were able to reduce their usage below a given quota. Large customers had the option to exchange quotas in the marketplace, which significantly improved the allocation of a very scarce resource. Most people were skeptical that it would work, but the level of engagement was very high and the market-based solution proved to be very effective. Over the eight months, usage decreased by 25 percent. Indeed, when water levels returned to normal, people kept conserving. The ESMAP study was able to review the Brazilian case and point out lessons learned for future application. For example, with the benefit of hindsight, it seems that policymakers should have implemented the program earlier. The study also compared and contrasted the Brazilian strategy with those in other countries, including Chile and the United States.

At the *Second World Forum on Energy Regulation* in October 2003, ESMAP and the World Bank worked with organizers to ensure that the agenda

reflected the needs of energy regulators in developing countries. Three presentations were developed of particular interest: one on regulatory systems for mini-grid operators, a second on employing “regulation by contract” as a transition for establishing new regulatory systems, and a third on employing market mechanisms for dealing with capacity and energy shortages that are encountered in many developing countries. In addition, ESMAP funded the participation of 25 energy regulators from developing countries and transition economies, 12 of whom were from Africa, as well as five presenters. Some key messages of particular relevance to developing countries emerging from the forum include the following:

- Support for regulators and their institutions is still needed.
- Alternatives to fully independent regulatory institutions should be considered where electricity markets are sub-critical. This should include further exploration of where regulation by contract is possible.
- In both developed and developing countries, clear, consistent, and predictable regulatory environments are needed to attract investment.

#### Box 5.8 Role of the Private Sector

At the Roundtable on Opportunities and Challenges in Water, Sanitation and Power Sectors in the MENA Region, 150 public and private sector participants highlighted the following issues as important to attracting more investment to the area:

- The region is energy-rich and access to power is high in most countries; however, there are important contrasts between countries, regional markets are very limited to date and cost recovery remains limited.
- The region is lagging behind in reform, which is critical to improve the efficiency and meet the investment needs of the water and power sectors.
- Appropriate regulation is a key element of the appropriate investment climate and can foster the participation of local and foreign investors to infrastructure financing.

Mitigating political risk is of vital importance for attracting private sector partners.

Issues of cost recovery, water and power losses and overstaffing are key management challenges that need to be addressed if the utilities are to become more efficient and effective.



- Coordinated reforms in the gas and oil markets, and electricity markets are needed.
- Regulators need to communicate and explain decisions much more clearly, both to the government and to consumers.

The ESMAP-funded participants filled out questionnaires to assess the usefulness of the forum to them. ESMAP will work with the organizers of the Third World Forum to ensure that it is of direct benefit to regulators from developing and transition economies.

### Public-Private Partnerships

While governments may wish to pursue or expand decentralizing and privatizing services, private investment in energy services cannot be taken as a given. Private investment has fluctuated over the past few years and remains uneven geographically.

ESMAP activities in this area in 2003 included:

- A conference that brought together government, private sector, and donor representatives

to discuss public-private partnerships in the Middle East and Northern Africa; and

- Studies on opportunities and challenges for SMEs to become more involved in energy services in Africa.

At the *Roundtable on Opportunities and Challenges in the Water, Sanitation and Power Sectors in the Middle East and North Africa Region*, private investors and representatives from the two sectors came to discuss how they could work together to develop water and energy services. Private investment has not been high in this region, and the roundtable was designed in part to understand why and how to change things (See Box 5.8). In the water sector, it was reported, the region only attracted 1 percent of total private investment in the sector worldwide. Because of the region's high population growth, energy investment needs are estimated to reach \$300 billion between 2000 and 2010. The roundtable participants discussed critical areas for improving infrastructure, such as private sector participation and regulation. The private sec-

tor participants were able to articulate some of their needs before investing, such as more streamlined procedures for transactions and enhanced upstream involvement of the Bank in risk sharing.

Two activities in Africa are focusing on the existing and potential roles for small and medium enterprises (SMEs) as utility service providers, leveraging outsourcing opportunities that are unfolding with sector reform.

ESMAP is collaborating with the IFC's Africa Project Development Facility (APDF) on the *Design and Pilot Testing of Capacity Building Product Line for SME Utility Service Providers in West Africa*. This activity is exploring prospective business opportunities for SMEs in the provision of utility services in peri-urban communities, such as the vending of prepayment metering services. A comprehensive field survey in Ghana to determine local practices and experiences of SMEs concluded that while SMEs are pursuing outsourcing opportunities that are emerging from ongoing utility sector reforms, they are taking considerable financial and other risks to do so. The activity developed a model, known as the Peri-Urban Utility Outsourcing Model (PUSOM), which can serve as a reference for ADPF to extend business development services to upgrade the

capacity of these SME utility service providers (SME-USPs). During the filed testing phase of PUSOM, APDF intends not only to help SME-USPs to minimize their risks, but also to apply capacity building support both at the level of the SME-USPs and the incumbent utility companies. The pilot in Ghana covers five SME-USPs that have secured concessions to provide services to small towns. Ultimately, APDF intends to replicate the model in other countries in the sub-region, such as The Gambia and Sierra Leone.

Under a related activity, *Expanding SME Outsourcing Opportunities from Utility Sector Reform*, ESMAP is collaborating with the African Energy Policy Research Network to determine the nature and extent of opportunities for SMEs to pursue emerging business opportunities due to similar utility sector reforms in Kenya, Tanzania, Uganda, Zambia, and Zimbabwe. The preliminary results are very promising; incumbent utilities in Kenya, Tanzania, and Zimbabwe already outsource significant aspects of electrification tasks in rural and/or per-urban communities to over 25 SMEs. The next steps are for ESMAP and AFREPREN to develop a joint strategy with other stakeholders—such as APDF, COMESA, and the African Development Foundation—to enhance the performance of the emerging SME-USPs in this sub-region of Africa.





## ESMAP KNOWLEDGE DISSEMINATION

6

## ESMAP KNOWLEDGE DISSEMINATION

Consistent with its business plan, ESMAP continued to place a high priority on the generation, capitalization, and dissemination of knowledge in 2003. ESMAP dissemination activities are designed to facilitate the scale-up of energy solution delivery by:

- Providing a knowledge management service to the broader energy and development community; and
- Contributing to the timely delivery of specific knowledge products to those who have an immediate need for them.

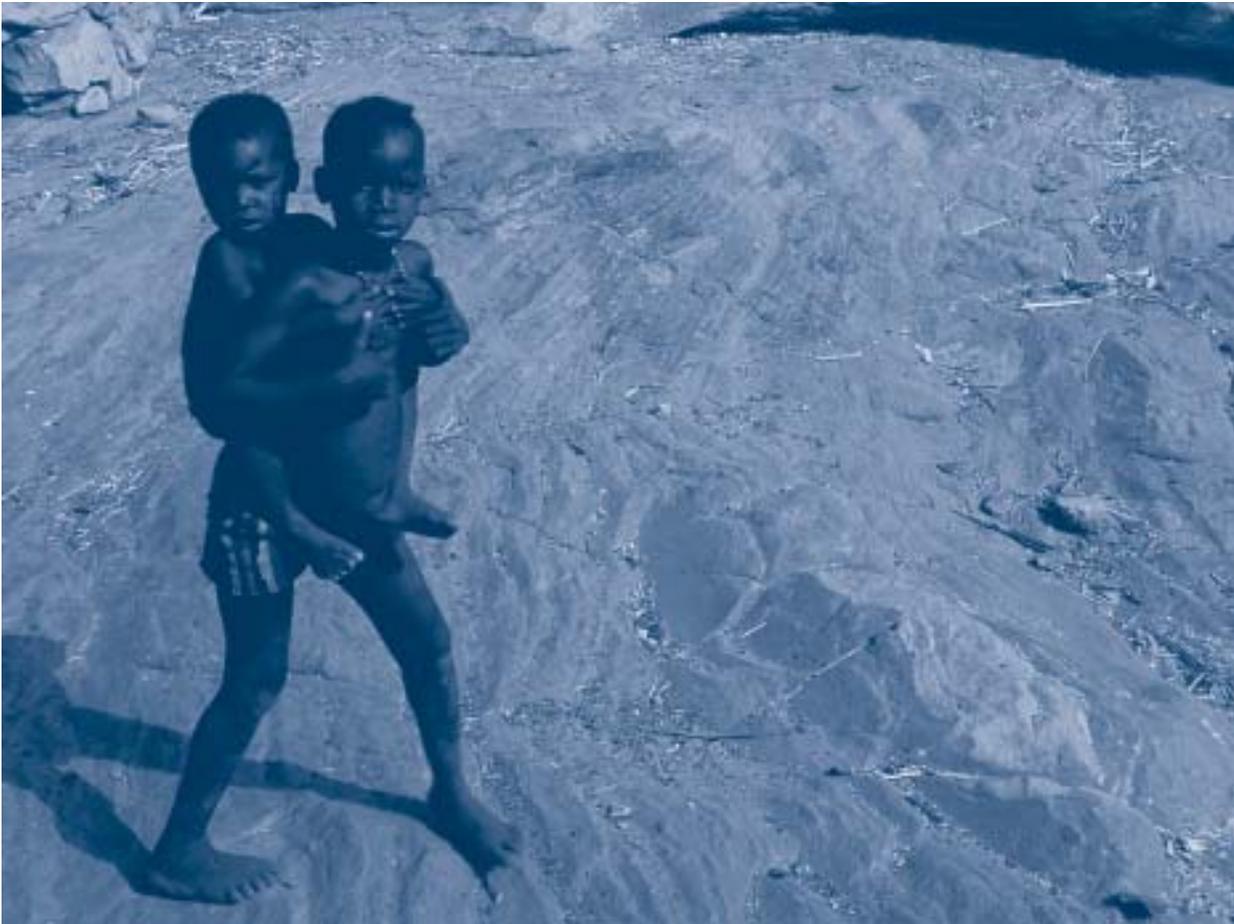
ESMAP's dissemination mission is defined as follows: to identify and evaluate both ESMAP-generated and external knowledge, with the aim of both contributing to the build-up of the global knowledge stock and to the timely delivery of specific knowledge products to those who will directly benefit. ESMAP promotes information/

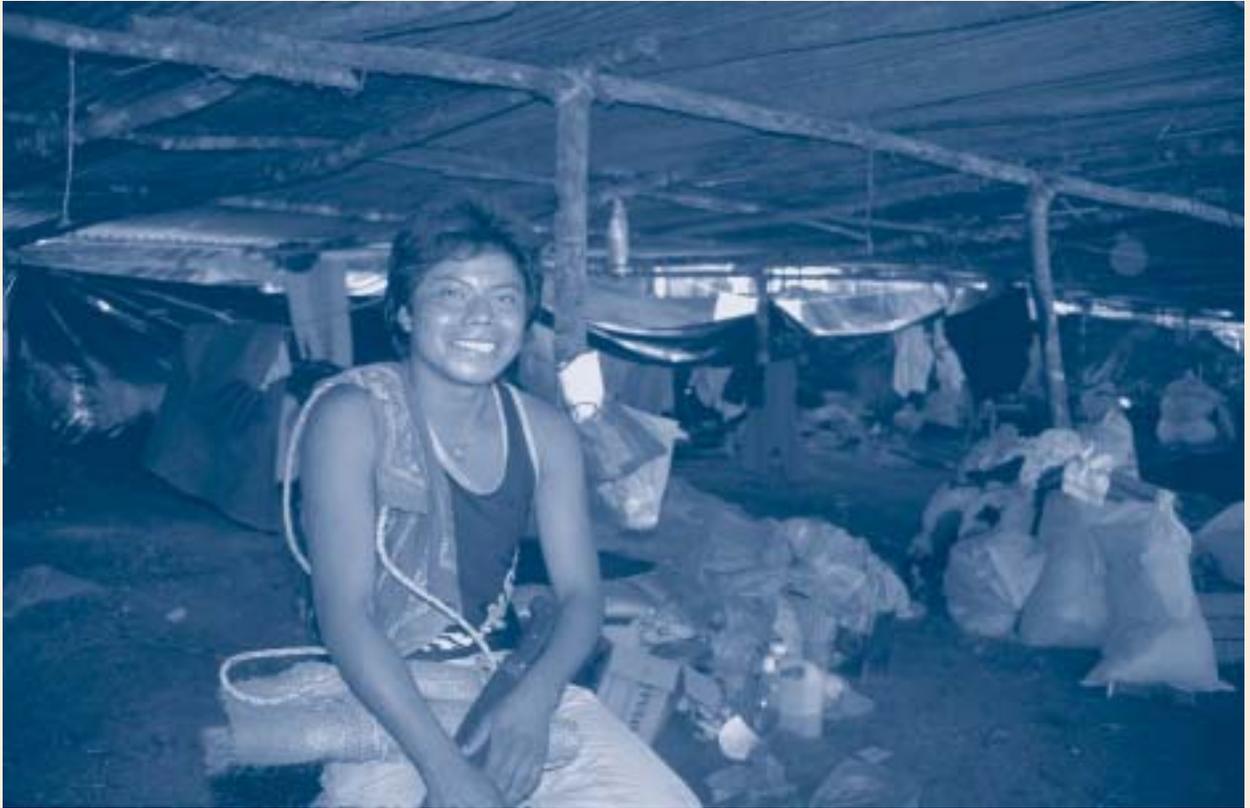
opinion exchange and facilitates the reaching of consensus for follow-up action.

## SEMINARS

In practical terms, ESMAP supports the creation and dissemination of a range of publications, both in print and online versions; informal information exchanges; capacity building and other training; and workshops and conferences.

ESMAP actively seeks opportunities to share the results of its activities with colleagues in The World Bank Group and with others in the energy and development communities. For example, a seminar on Reducing Energy Costs in Water Utilities through Energy Efficiency brought together ESMAP project experiences in Brazil, China, and Central Asia. ESMAP led a roundtable discussion on lessons learned in hydropower investment, in which private sector companies shared experiences. Informal





lunch meetings were held on topics that ranged from small-scale rural gas projects in Bolivia, to rapid assessments of environmental policies in the power sector, to landfill gas capture in sub-Saharan Africa. ESMAP also successfully organized an event at the Bank to share the experience and lessons learned in ESMAP indoor air pollution projects in five countries (China, Guatemala, India, Mongolia, and Nicaragua). The workshop generated a great deal of interests among energy, environment, and health staff in indoor air pollution in developing countries. Summaries of brownbag presentations are on the ESMAP Web site as a way to further disseminate key findings and discussions.

## WORKSHOPS

As important as the dissemination of knowledge through publications and seminars is, ESMAP considers the interactive nature of workshops and conferences as a critical piece of its knowledge dissemination mission. Convening partners to exchange information and experiences helps

expand and multiply the impact of resources and expertise in the energy sector.

This was most in evidence in workshops sponsored through GVEP. GVEP-sponsored workshops in 2003 included the following:

- Two regional Energy-Poverty workshops in Africa that brought together government ministers, NGOs, private sector representatives and others from energy and from health, water, and other sectors. This cross-sectoral focus was particularly well-received by the participants. Each country's team created a preliminary action plan to integrate energy services in multisectoral poverty reduction programs.
- In April 2003, the GVEP Technical Secretariat and Kreditanstalt für Wiederaufbau sponsored a workshop in Berlin for input on the GVEP financing facilitation line.
- In June 2003, the South Asia Practitioners' Workshop brought together energy practitioners to share lessons learned and develop best practices,

and network for follow-up opportunities. These practitioners had many years of experience in their own countries, but had never had the opportunity to share experiences across borders.

- In July 2003, a major regional conference was held in Santa Cruz, Bolivia, on the delivery of energy services to rural areas in Latin America and the Caribbean. More than 260 participants from 21 countries attended. Eight countries have since presented draft national action plans that they developed with support from the conference.

At the *Second World Forum on Energy Regulation*, held in Rome in October 2003, ESMAP had as an objective involving more developing country regulators and ensuring that the forum agenda met their needs. Feedback after the forum confirmed that the

Second Form was more relevant to developing country needs than the previous forum held in 2001.

In Norway, ESMAP sponsored a workshop on Revenue management in the petroleum industry for a delegation from Chad. The objective was to inform the delegation about the way Norway is handling the income from the petroleum industry, and create a forum for discussion about relevant issues concerning revenue management.

Most presentations, publications, and other ESMAP knowledge products are accessible via the ESMAP Web site. Visitors can also request to be put on an electronic mailing list to receive notification when new publications are available.



## GOVERNANCE AND MANAGEMENT

7

## GOVERNANCE AND MANAGEMENT

## THE CONSULTATIVE GROUP

The Governance structure of ESMAP includes a Consultative Group (CG) composed of a chairperson, representatives of donors, and members “at large” from countries receiving ESMAP assistance. During 2003, Ms. Nemat Shafik, the World Bank’s Vice President for Infrastructure, served as chair of the CG and Mr. Jamal Saghir served as acting chair. Mr. Rufino Boomasang, President and CEO, PNO Exploration Corporation, Philippines, and Mr. Ketane Sithole, Business Development Manager, Grinaker-LTA, Botswana, continued as Members at Large.

The annual meetings of the Energy Trust Funded Programs (ETFP) managed by the World Bank were held April 28–30, 2003, in Berlin, Germany, chaired by Mr. Jamal Saghir, the World Bank’s Director for Energy and Water and Chair of the World Bank’s Energy and Mining Sector Board, on behalf of Ms. Shafik.

The meeting, hosted at the Deutsche Gesellschaft fuer Technische Zusammenarbeit (GTZ), was organized around the theme “*Meeting Expectations: Post World Summit for Sustainable Development.*”

Discussion included the following:

*Post-WSSD and Changes in the Global Environment:* These discussions highlighted the fact that the WSSD put energy back on the agenda with emphasis on how energy services contribute to development; the challenges in increasing private sector investments in developing country energy markets; and the continuing need to improve and maintain energy infrastructure to ensure a flow of services.

*Accelerating the Implementation of the World Bank Group’s (WBG) Energy Business Renewal Strategy:* Mr. Saghir outlined how the World Bank Group is positioned to meet the challenges facing the global energy sector, outlined the priorities of the Bank’s energy strategy: direct poverty reduction, macro/fiscal stabilization, and environmental sustainability. Discussion focused on the need for a strategic approach and selectivity in reform-related interventions in developing countries.

*The Challenge of Scaling Up Energy Services: Global Village Energy Partnership:* Ms. Dominique Lallement, ESMAP Program Manager and coordinator of the GVEP Secretariat, presented a progress report on

GVEP implementation. The strength of the partnerships that have developed and the eventual transition of the Secretariat from ESMAP were also discussed.

*Overview of the Energy Trust-Funded Programs (ETFPs):* Program Managers of the four ETFPs presented updates of their programs and emerging issues. New agenda items that ESMAP is beginning to address include operationalizing the energy-poverty agenda, urbanization, public/private partnerships, energy security, measuring results, and evaluating impact.

Annex 1 presents the Summary Proceedings of the April 2003 CG meeting.

## THE TECHNICAL ADVISORY GROUP

Technical Advisory Group (TAG) comprising of five international independent energy and development experts reviews the Energy Trust-Funded Programs, including ESMAP. It submits annual reports providing guidance to the CG and to ESMAP Management and undertakes other reports and surveys. The Technical Advisory Group (TAG) consisted of five members in 2003: Messrs. Alfredo Mirkin (Moderator), Andrew Barnett, Youba Sokona, Jan Moen, and Ms. Jyoti Parikh.

In its report at the April 2003 CG meeting, the TAG noted that the ETFPs were in a strong position to deliver on four essential tasks: innovation, intellectual leadership (promoting new ideas and new ways of thinking), knowledge management (institutional learning), and specialized technical assistance. The TAG suggested a consolidation of the four ETFPs. While this was not accepted by the CG, it was decided to increase coherence among them through the World Bank’s Energy and Mining Sector Board.

The TAG also held an informal meeting in Copenhagen, Denmark, in September 2003 to review its work plan and progress on a series of client surveys and thematic reviews.

In 2003, the TAG oversaw a review of ESMAP work on regional integration of energy markets. The review focuses on five ESMAP projects intended to engender regional integration in the Mekong River delta, the Nile Basin, South America, Southern Africa, and West Africa. TAG also consulted with European, North American and Indian partners on the value-added of the program.



## FINANCIAL REVIEW

8

## FINANCIAL REVIEW

## CONTRIBUTIONS RECEIVED

ESMAP receipts from its donors totaled US\$9.5 million in 2003 and US\$7.8 million in 2002. The contribution in 2003 marks an increase of about 21% from 2002. This increase is largely due to the funding received to support the activities under the Global Village Energy Partnership. This year, eight donors, in addition to the World Bank made cash transfers to the Programme through trust funds. Donors have already made pledges for 5 million for the calendar year 2004.

Table 1 shows actual receipts by individual donor for the period 2001-2003, also illustrated in Figure 8.1.

## CORE AND THEMATIC FUNDING

Core contributions totaled about US\$1.65 million in 2003 or 17 percent of total contributions. Sweden and United Kingdom provided core and project-specific funding, and Germany provided core and thematic funding.

The World Bank's contribution (which is considered core) was \$535,000 in 2003, a decrease of about 1.8 percentage from its contribution of \$545,000 in 2002.

The total contribution received for thematic funding in 2003 was US\$5.8 million. The Netherlands made a contribution of US\$3.9 million, Norway US\$1.1 million, and Germany of US\$ 0.9 million.

## Project Funding

Project specific funding totaled US\$1.4 million in 2003 compared to US\$2.15 million in 2002. These contributions were provided by Canada, Sweden and United Kingdom.

Given the continuing gap between financing needs and core or thematic resources, additional funding will continue to be mobilized from donors for promising projects after they reached the necessary stage in the evaluation process.

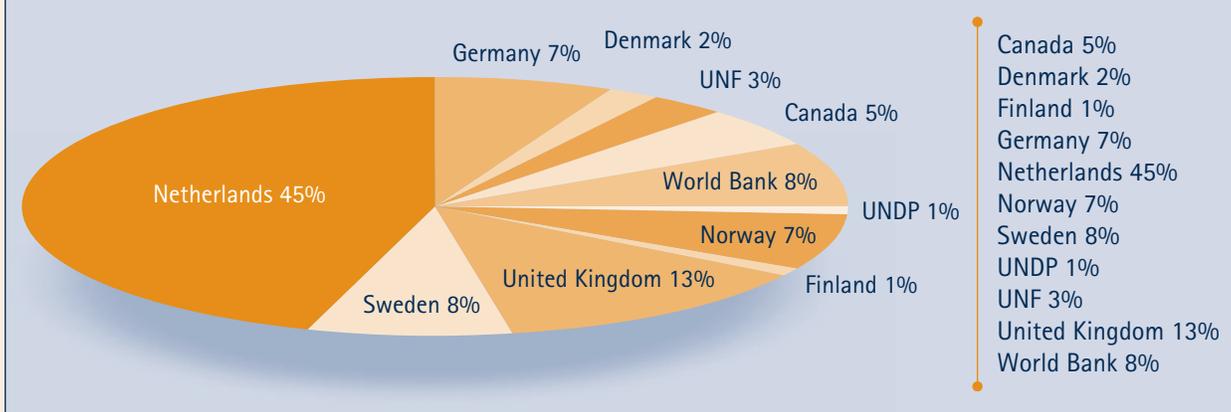
## Disbursements and Expenditures

Table 8.4 shows that disbursements in 2003 totaled US\$7.6 million, an increase of US\$1.5 mil-

US\$ (000)	2001	2002	2003	Pledges for 2004	Total 01-03	Of which, Core 01-03 (US\$)	% of Total Receipts 01-03	% of Total Receipts 2003	% of Total Core
UNDP	0.0	100.0	100.0	50.0	200.0	200.0	0.8%	1.3%	2.4%
World Bank	1,032.4	545.4	535.0	*225.0	2,112.8	2,192.3	8.3%	7.0%	26.2%
Canada	255.9	737.8	277.6	193.0	1,271.3	0.0	5.0%	9.4%	0.0%
Germany	72.4	899.5	892.3	524.0	1,864.2	473.0	7.3%	11.5%	5.6%
Finland	168.7	82.8	0.0	0.0	251.5	251.5	1.0%	1.1%	3.0%
Netherlands	4,468.8	3,097.0	3,964.3	1,110.0	11,530.1	0.0	45.2%	39.6%	0.0%
Denmark	234.8	258.1	0.0	0.0	492.9	492.9	1.9%	3.3%	5.9%
Norway	576.5	0.0	1,150.0	350.0	1,726.5	576.5	6.8%	0.0%	6.9%
Sweden	487.4	636.4	1,023.2	384.0	2,147.0	1,663.6	8.4%	8.1%	19.8%
United Kingdom	880.3	1,125.2	1,246.3	1,852.0	3,251.8	2,533.2	12.8%	14.4%	30.2%
United Nations Foundation	0.0	335.0	300.0	300.0	635.0	0.0	2.5%	4.3%	0.0%
<b>Total</b>	<b>8,177.2</b>	<b>7,817.2</b>	<b>9,488.7</b>	<b>4,988.0</b>	<b>25,483.1</b>	<b>8,383.0</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

\* Based on projected disbursements.

**Figure 8.1 ESMAP Receipts 2001–2003**



**Table 8.2 Core/Thematic ESMAP Donor Contributions, 2001–2003**

	Total Donor <sup>a/</sup> Contributions (\$m)	Of which, Core (\$m)	Of which, Core <i>plus</i> Thematic (\$m)	Core as % of Total Donor Contributions (%)	Core <i>plus</i> Thematic as % of Total Donor Contributions (%)
2001	7.14	2.42	6.89	33.9%	96.5%
2002	7.17	1.92	5.02	26.8%	70.0%
2003	8.8	1.65	7.45	18.8%	84.7%
Total	23.1	5.9	19.36	25.5%	83.8%

<sup>a/</sup> Does not include world Bank and UNDP.

lion from disbursements in 2002. Expenditures on work program development (time spent by ESMAP staff to help develop specific ESMAP projects) increased from US\$51,000 to US\$75,000. Program management costs increased marginally from US\$394,000 in 2002 to US\$401,000 in 2003.

**Table 8.3 Receipts by Type of Funding in 2003**

	Amount (millions of US\$)
WB Contribution	0.535
UNDP	0.100
Core	1.650
Thematic	5.797
Project	1.406
Country Program	0
Total	9.488

### Funding New Projects and Cash Availability

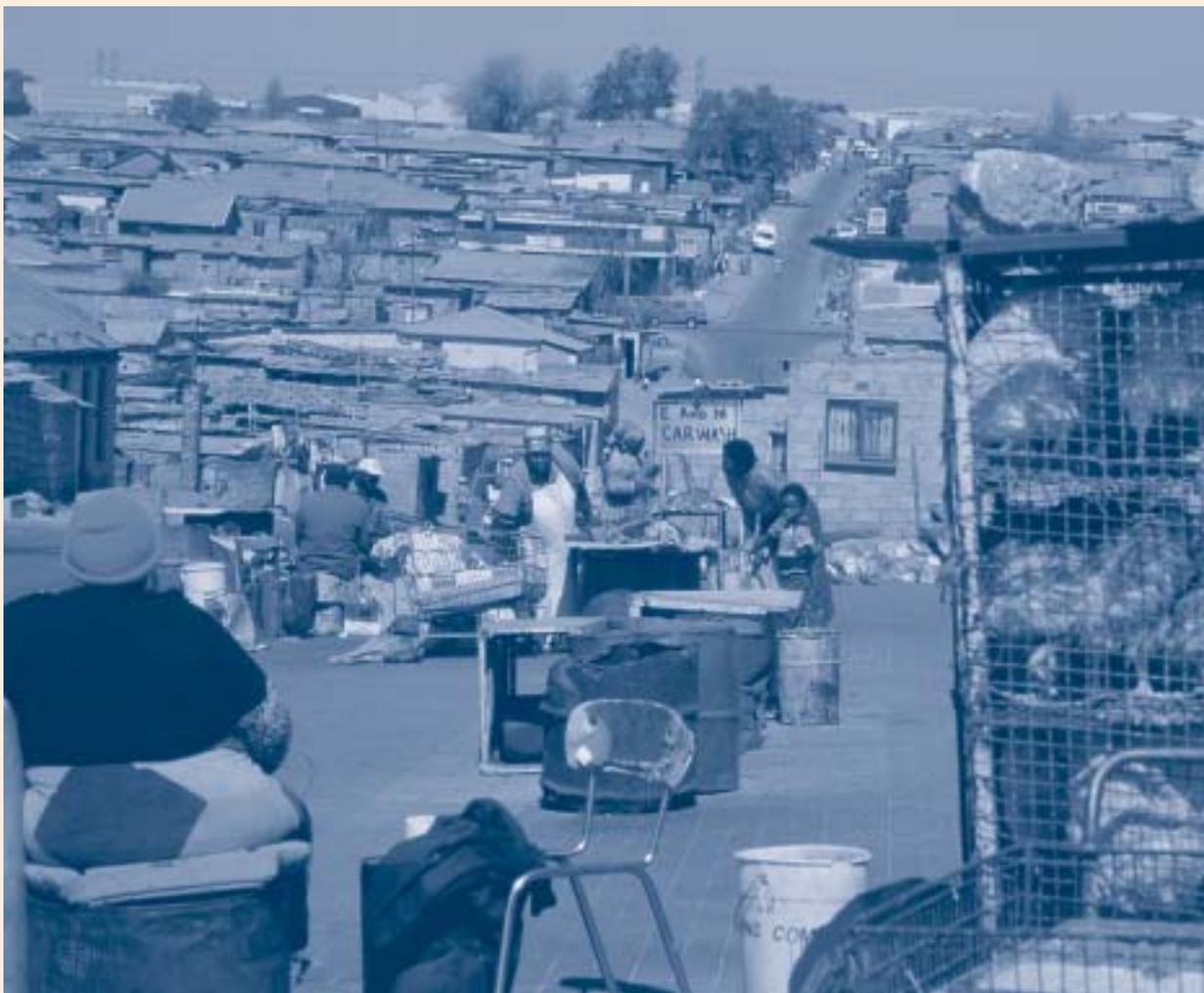
During 2003 ESMAP launched 43 new projects with a cumulative budget of US\$6.7 million. There was a clear increase both in terms of the number of projects and in the cumulative budget in comparison to 2002 (29 projects with a cumulative budget of US\$5.6 million). Out of this total cost, ESMAP allocated funding of US\$5.3 million. The difference of US\$1.2 million is required to fund the subsequent tranches of projects.

There are still ongoing projects prior 2003 that are partially funded which require a total of US\$3.5 million to fully finance these ongoing projects. In total, ESMAP requires US\$4.7 million to finance the launched projects and the partially funded projects. The present cash balance of 5.5 million puts ESMAP into a seriously constrained financial situation.

**Table 8.4 ESMAP Disbursements and Expenditures, 2001-2003**

(thousand US\$)			
	2001	2002	2003
Project Costs	5,445	5,224	6,727
Work Program Development <sup>1/</sup>	40	51	75
Program Management	425	394	401
Knowledge Dissemination	82	170	165
Governance	321	172	212
Of which TAG	166	72	133
Of which CG	155	100	79
Total	6,313	6,011	7,580
Of which funded by Donors	5,281	5,366	7,045
Of which funded from World Bank budget	1,032	545	535

<sup>1/</sup> Includes Review of Proposals





ANNEXES

ANNEXES

# ANNEX 1

## **SUMMARY PROCEEDINGS OF THE APRIL 28–30, 2003, JOINT DONORS' ROUNDTABLE MEETING FOR TRUST FUNDED ENERGY PROGRAMS MANAGED BY THE WORLD BANK, BERLIN, GERMANY**

### **"Meeting Expectations: Post World Summit for Sustainable Development"**

The Consultative Group (CG) for the Energy Trust-Funded Programs (ETFPs) managed by the World Bank met in Berlin, Germany, on April 28–30, 2003. Mr. Jamal Saghir, the World Bank's Director for Energy and Water and Chair of the World Bank's Energy and Mining Sector Board chaired the meeting on behalf of Ms. Nemat Shafik, the World Bank's Vice President for Infrastructure and Chair of the CG. This document presents a summary of the meeting's proceedings.

After welcoming remarks by Mr. Manfred Konukiewitz, Head of the Infrastructure Division of the Bundesministerium für Wirtschaftliche Zusammenarbeit und Entwicklung (BMZ) of the Federal Republic of Germany, Mr. Jamal Saghir outlined the objectives of the meeting: to discuss the concrete solutions needed to advance the implementation of the energy agenda following the World Summit for Sustainable Development (WSSD) held in Johannesburg in August, 2002, to review the achievements of the ETFP's since the last CG and to establish how to further leverage them.

### **Post-WSSD: What Has Changed in the Global Environment?**

The Honorable Daudi Migereko, Minister of State for Energy, Uganda, emphasized the importance of energy for meeting the commitments related to access which were articulated at WSSD. He reminded the CG members of the harsh constraints faced by such countries as Uganda: insufficient incomes, food insecurity, environmental degradation, insufficient flow of funds for energy including the lack of financing for the private sector. Based on Uganda's experience in working towards these goals, he highlighted the importance of high-level and sustained political commitment to energy development including to establish the incentive framework to mobilize the participation of the private sector. He also highlighted opportunities offered by the use of decentralized energy sources, smart subsidies, low cost technologies, and innovative marketing approaches. He recommended a focus on major areas of energy demand, particularly the industrial and service sectors in rural areas which can generate income, create employment as well as sustainable demand for energy services.

In presenting the perspective of bilateral donors, Mr. Peter Davies of the United Kingdom's Department for International Development (DFID), stated that WSSD had put energy back on the agenda with emphasis on how energy services contribute to development and not simply on generation and transmission infrastructure. DFID takes the view that the Millennium Development Goals (MDGs) cannot be met without energy services and has tailored its thinking and programs to focus on achieving the MDGs. In addition, he also underscored the importance of increasing the role of domestic local private sectors in developing countries to deliver energy services.

Voicing the view of the international private sector, Jean-Etienne Klimt of the E7 informed the meeting that the E7 signed onto 26 partnerships at WSSD. As conditions of success for energy investments, he

emphasized the importance of a sound regulatory and legal framework, financial viability so that the investments can at least be maintained, support of local institutions, and coordination among development partners. He also commented that the private sector is hard pressed to get a planned return on investment of at least 15% (knowing that actual returns are likely to slip to around 7%).

Presenting the perspective of the multilateral institutions, Ms. Susan McDade of the UNDP emphasized that while energy has risen to the top of the development agenda, it is still not sufficiently recognized as an issue cutting across other sectors. She pointed to the need for an international body (not housed in the UN system or in the World Bank) to continue to push the energy agenda since the inter-governmental process has already achieved what it could. Among the MDGs she highlighted the importance of MDG 8, which calls for partnerships, without which the MDGs are in danger of being seen as new forms of conditionality. For the international community, the challenge will be to maintain the momentum for action developed at WSSD.

*Discussion.* The ensuing discussion was dominated by two issues:

- how to capitalize on the opportunity for energy on the development agenda; and
- how to increase the participation of the private sector in developing country energy sectors.

The shift from energy infrastructure to access to energy services was welcome but the risk that the pendulum may swing too far may also arise: conventional infrastructure remains needed. The tension between renewable energy targets versus energy services targets was recognized as well as the need to make conventional energy more sustainable since the latter will continue to provide at least 80% of the needs for years to come. Clearly, without energy infrastructure, it would be difficult to ensure a flow of services. For Africa, this is an issue that the New Partnership for Africa's Development (NEPAD) will attempt to address. It was pointed out that the energy sector can learn from the water sector, which has greater global clarity on what needs to be done, more visible linkages with the MDGs, a systematic database of MDG-related indicators, and better organized players (like the Council of African Water Ministers). The Netherlands also tabled the idea of a small group of recognized energy practitioners headed by a high profile international figure.

The decline in international private sector investments from developing country energy markets since the late 1990s was contrasted with the significant future needs for infrastructure investments (in East Asia, infrastructure investment needs are projected at US\$300bn per year over the next 5 years compared to global annual private investment in infrastructure of less than US\$40bn at its peak in 1997). The major utilities from OECD countries have faced financial pressures at home and losses in developing countries and are therefore receding from developing countries. It was argued that the focus on shareholder value defined by financial markets in home countries significantly reduces the time horizons of major American and European energy corporations. This reduced horizon makes them unsuitable as investors in developing countries where longer time horizons for investments are needed. However, the corporate priorities of international energy companies are only one reason for investment failures in developing countries. India's experience with international investment in the power sector has highlighted weak corporate and sector governance as more significant issues than the short time horizons of international corporations. The global experience points to the need for better project preparation and better mitigation of commercial, regulatory, and currency risks. There was consensus that more is needed to engage local and smaller-scale private players who can play a complementary role

to that of large players in increasing access to modern energy services. There is a need to develop instruments (including the financial and institutional mechanisms) for supporting their participation. Finally, the need to mobilize public resources more effectively to support partnerships with the private sector was highlighted as a key challenge in particular for the provision of rural energy services.

### Report of the Technical Advisory Group

As acting moderator, Mr. Andrew Barnett presented the report of the Technical Assistance Group (TAG) to the CG. Mr. Barnett outlined the TAG's activities over the past year and reported the induction of Ms. Jyoti Parikh to the TAG. The TAG argued that a mix of developments has produced an opportunity for change in the Energy Trust Funded Programs (ETFPs). Significant developments outside the World Bank Group include energy being placed back on the political agenda for poverty reduction at WSSD and the inclusion of energy-related targets in the NEPAD agenda. Internally, the impending end of funding cycles to the ETFPs, the ASTAE review and the OED report on global trust funds managed by the World Bank have created an opportunity for institutional change. To highlight the changing agenda of the energy sector, the TAG cited the concern about the lack of foreign and local private flows to the power sector of developing countries and the emerging need for "a new discourse on the future of energy". This new discourse would have to reach beyond policy reform and strategic investors and revisit some technology issues such as the role of hydropower.

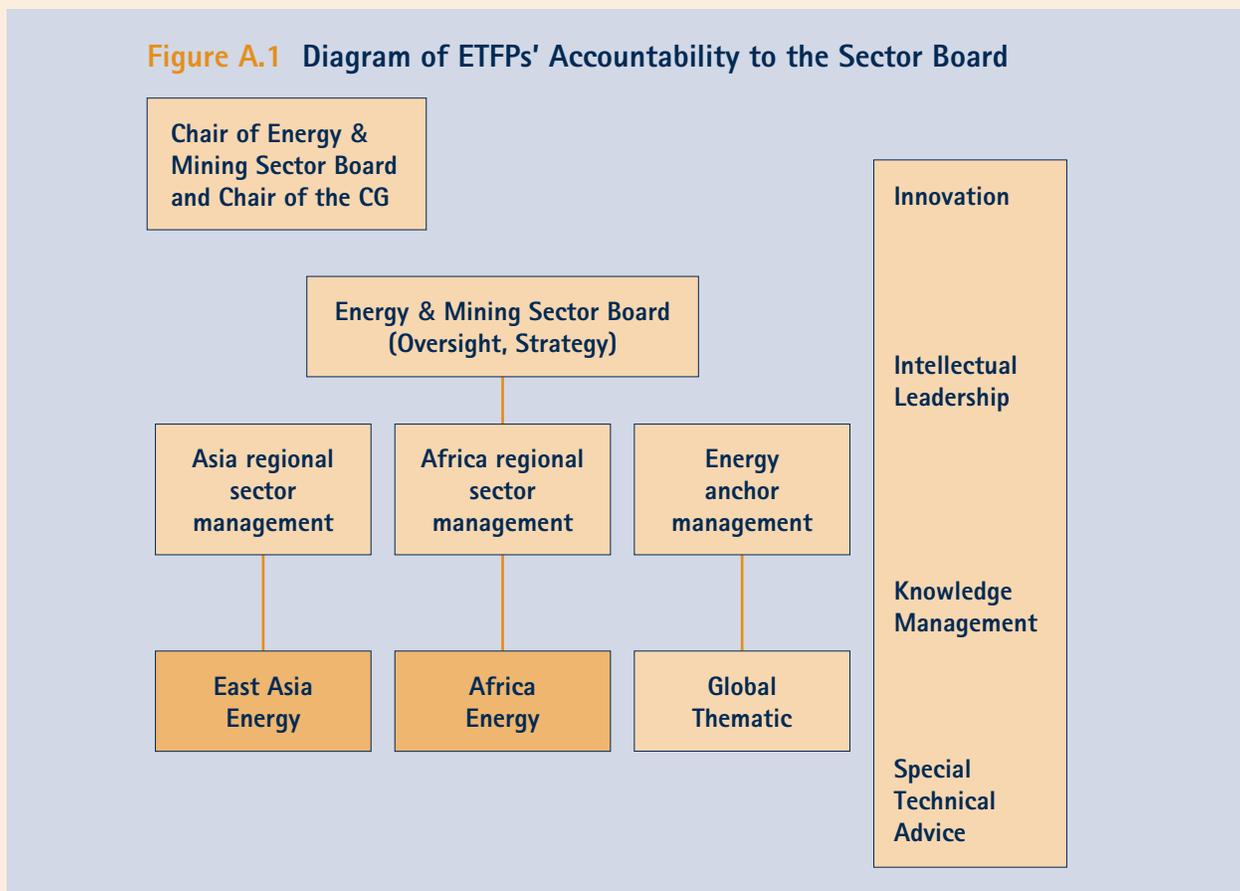
The TAG stated that, while the energy trust-funded programs are doing valuable work, they can benefit from greater coherence and continuity. The TAG therefore proposed four essential tasks that the ETFPs could deliver: innovation, intellectual leadership (that is, promoting new ideas and new ways of thinking), knowledge management (that is, institutional learning), and specialized technical assistance. To implement these four tasks, the TAG proposed that the four ETFPs be consolidated into a single Energy Trust-Funded Program with four "facilities" or funding windows.

*Discussion.* The debate about the value that would be added by the proposed consolidation was dominated by five considerations:

- leveraging additional resource mobilization,
- gaining from the synergy among the programs,
- the risk of losing the regional relevance and proximity to Bank operations,
- the pros and cons from the donors' perspective in terms of their ability to influence the strategic priorities for World Bank activities; and
- possible economies in overhead costs.

Following a rich debate during the three days of the CG, this proposal of a consolidated trust-funded program was not accepted by the CG. Instead, the counter-proposal submitted by Mr. Jamal Saghir was retained (see diagram). Consensus emerged around increasing coherence among the ETFPs through the World Bank's Energy and Mining Sector Board. The ETFP will consist of ESMAP, a regional program for Asia, and a regional program for Africa. Day-to-day management of the latter two will remain with the region. All programs will report, like ESMAP, to the Energy and Mining Sector Board, which will bear accountability for overall implementation of results. Each program will submit a business plan to the Sector Board and each program manager will report to the Sector Board every six months.

**Figure A.1** Diagram of ETFPs' Accountability to the Sector Board



## ACCELERATING THE IMPLEMENTATION OF THE WORLD BANK'S ENERGY BUSINESS RENEWAL STRATEGY

Mr. Jamal Saghir outlined the challenges facing the global energy sector and how the World Bank Group's strategy is positioned to meet these challenges. The backdrop to the WSSD energy agenda is the declining interest of private investors in developing-country energy sectors, a decreasing faith in markets among policymakers, and high global energy costs. Mr. Saghir informed that the market for privately financed projects is likely to be more challenging in the coming years even as the investment needs of developing countries will continue to increase. Global energy costs have also risen with instability in the Middle East and Venezuela, high energy intensity in transition economies, issues of rent distribution among energy-exporting countries, environmental constraints, and lagging investments in production. However, private capital can be attracted even to the least developed countries with improved project preparation, reduced (commercial, regulatory, foreign exchange, and sovereign) risk, greater flexibility on project structures by the World Bank, greater use of risk mitigation instruments, and greater access, in general, to IFI instruments.

Mr. Saghir pointed out that after the international development meetings in Monterrey (March 2002), Doha (November 2001), and Johannesburg (September 2002), a shared strategic thinking has emerged on what the development community is trying to achieve—poverty reduction and growth—and how to achieve it. This shared thinking recognizes that the key factors that lead to poverty reduction and growth are:

- country commitment to good policies, institutions, and governance
- an international environment that increases the return on reform
- greater and more effective aid to support reform; and
- focus on the growth agenda while increasing investment as well as ODA.

The Bank's energy strategy (2001) employs a framework with four priorities: direct poverty reduction, macro/fiscal stabilization, governance/private sector development, and environmental sustainability (including renewable energy). Mr. Saghir outlined how each of these priorities is being addressed by the World Bank Group through a growing number of lending interventions with energy components, growing volumes of financing, and increased leveraging of a mix of non-lending products (e.g., guarantees, PCF, GEF financing, etc). The Bank Group is contributing to the goal of sustainable energy service delivery by working at key interfaces such as institutions (governments, service enterprises, and communities), financing mechanisms and efficient markets across the range of technologies. The WSSD energy agenda reinforces the World Bank's energy strategy by calling for increased access to modern energy services by the poor, improved targeting of subsidies, improved efficiency of energy use, and increased use of renewable energy. He argued that partnerships with all players are key for the successful implementation of the Bank's energy strategy.

*Discussion.* The discussion focused on the need for a strategic approach and selectivity in reform-related interventions in developing countries. Mr. Saghir explained that the World Bank's interventions range from seed funding and technical assistance to countries considering reform; capacity building and some investment lending to countries that have already embarked on reforms; to a mix of lending and other instruments for countries deep along the reform path. The targeting of subsidies for effective delivery of energy services to the poor was also discussed. To help client countries in delivering targeted subsidies, the donor community and the IFIs need to develop terms of engagement with the public sector and support the design of subsidy schemes and delivery mechanisms. In the context of lower interest in energy investments by international private investors and the restrictions of the public sector in developing countries, the participation of the local private sector in energy service delivery was also discussed. Mr. Saghir pointed out that the World Bank is exploring ways to deliver local currency financing and lending at the sub-sovereign level to support the local private sector and also buttress the efforts of a decentralizing public sector.

## **THE CHALLENGE OF SCALING-UP ENERGY SERVICES: GLOBAL VILLAGE ENERGY PARTNERSHIP (GVEP)**

Ms. Dominique Lallement, Program Manager of ESMAP and coordinator of the GVEP Technical Secretariat, presented a progress report on the implementation of the Global Village Energy Partnership (GVEP) since it was officially launched at WSSD. GVEP seeks to put in place a 10-year implementation-based partnership to reduce poverty and enhance economic and social development through the accelerated provision of modern energy services to the unserved and underserved. It will provide support to the development and financing of action plans for energy-poverty reduction, develop capacity of local institutions, entrepreneurs, consumers groups; it will provide financing facilitation, knowledge management, and monitoring and evaluation related to its mission. More than 150 partner organizations from 41 countries representing NGOs, the private sector, governments and multilateral institutions have now joined the partnership. The main outputs delivered to date include: GVEP's workshops on energy and poverty reduction (in Addis Ababa and Dakar, engaging 13 countries and over 200 participants), which are being followed up with national action plans in participating countries. GVEP's consultation workshop (Berlin)

on the need for a pre-investment fund for scaling up energy service delivery found that there is a need for pre-investment funding facilitation (but not for a new fund) and for risk mitigation instruments for complete investment cycle from idea to operations. GVEP hopes to support scale-up through incremental resources mobilized by the technical secretariat and by individual partners as well as through large-scale investment and financing resources for energy service development.

In his commentary, Mr. Peter Davies commended GVEP's impressive progress, in particular, its participatory and cross-sectoral approach, and the delivery of concrete products to partner countries, especially in Africa. He pointed out that moving governments towards GVEP's goals was key since they are the most significant movers of change in most developing countries, and that country action plans need support from all stakeholders including bilateral donors.

*Discussion.* Susan McDade commended GVEP as one of the few partnerships that is working and cited GVEP as an example of harmonious cooperation between the UNDP and the World Bank Group. She pointed to the importance of pre-investment funding and for developing bankable business models for rural energy service delivery. Ms. McDade underscored the need to address the skepticism that prevails among NGOs about post-WSSD implementation despite the commitment of the UNDP and the World Bank Group. The GEF-GVEP link needs to be developed. She tabled the issue of how long GVEP should remain within ESMAP.

Mr. Jamal Saghir commended the Technical Secretariat for its work and tabled two issues related to GVEP on behalf of the World Bank Group: (1) that the World Bank Group is accountable for GVEP's performance but is not represented on the board of GVEP; and (2) that the GVEP Technical Secretariat should move to a developing country within the next three months. These issues would be discussed at the meeting of the GVEP Board in May; the World Bank would remain open to considering a reasonable timeline for the transfer of the Technical Secretariat. Other comments included i) the need to keep engaging the political levels in support of the partnership, ii) the need to maintain the spirit of what has been launched in terms of transparency and accountability for results, iii) the need to find a host institution for the Technical Secretariat as well as Board members with the right clout, and (iv) the need to coordinate with other initiatives particularly with the European Union Rural Energy Initiative.

## OVERVIEW OF THE ENERGY TRUST-FUNDED PROGRAMS

### Africa Regional Program

Mr. Ananda Covindassamy, the World Bank's Africa Energy Sector Manager, presented the Bank's Africa strategy for energy and poverty reduction. He stated that the Bank has mainstreamed biomass and rural/renewable energy into its Africa portfolio. He pointed to the increase in rural/renewable energy projects in the Africa portfolio and the quadrupling of staff allocation to rural energy since 1999. In biomass, the work has been in policy advice activities and the design of components in Bank lending operations. The Bank's regional energy strategy will support high risk/high reward projects where the Bank can play a catalytic role; integration of regional energy systems will be given priority, and the Bank will support the formulation of energy strategies by client countries themselves. Mr. Covindassamy outlined annual outcome indicators for better delivery of energy services. While the Bank is allocating more of its own resources to expand investments in these areas, if these funds can be leveraged with donors' contributions, there would a significant difference in outcomes.

Mr. Praful Patel, the World Bank's Sector Director for Private Sector and Infrastructure in Africa, identified three levels at which rural/renewable energy and biomass have been mainstreamed: *coverage* across the continent rather than in a few pilot countries, *leverage* for every World Bank dollar through co-financing, and the focus of measurements on *outcomes*. These agendas are being mainstreamed as they get systematically inserted into the Poverty Reduction Strategy Papers (PRSPs). The Africa energy team is closely working with NEPAD. He emphasized that the client need clearly exists, and with donor support, the Bank can do more.

## AFRICA RURAL AND RENEWABLE ENERGY INITIATIVE (AFRREI)

Mr. Arun Sanghvi, Program Manager for AFRREI, stated that AFRREI has helped bring a major change in thinking about rural electrification even though it has taken more time and resources than had been envisaged. The AFRREI paradigm is gaining acceptance by client countries in Africa as well as outside Africa. Mr. Sanghvi pointed out that, contrary to concerns raised earlier, the Uganda Energy for Rural Transformation project is not facing hurdles due to complexity because the Government of Uganda fully embraces and owns the project. After AFRREI's initial approach of large changes in a few pilot countries, a new approach is now needed to make incremental changes in many countries and donors can make a significant contribution towards consolidating and mainstreaming successful innovations in rural electrification. AFRREI has an exit strategy for FY03-FY05 during which new AFRREI projects will be undertaken. Any additional resources for introducing or mainstreaming innovation in rural electrification projects will be managed by the Africa energy unit.

In his commentary, Mr. Jean-Paul Laude of DANIDA, Denmark, commended AFRREI for introducing a paradigm shift in rural/renewable energy and helping mainstream it into the World Bank's operations. This experience needs to be shared with the development community particularly on how risk can be shared and how the local banking sector can be leveraged. Even though the Uganda project took more time and resources than anticipated, DANIDA considers the work to be on the right track.

The Uganda delegation recognized AFRREI's catalytic role in fertilizing Uganda's thinking about operationalizing the rural electrification agenda which had been developed with ESMAP support in 1996. It acknowledged that pioneering the multi-faceted approach of the Energy for Rural Transformation project has not been easy but the experience has strengthened inter-ministerial coordination. The project is now beginning to move and Uganda needs donor support in capitalizing its rural electrification fund. The delegation urged the Bank to address with the IMF and others the issue of banking regulation, which constrains the ability of local banks to finance energy companies. It also expressed gratitude on the part of Uganda to the World Bank, AFRREI, and ESMAP for their support.

## REGIONAL PROGRAM ON THE TRADITIONAL ENERGY SECTOR (RPTES)

Mr. Boris Utria, Program Manager of RPTES, stated that the main achievement of RPTES over the past ten years is a revival and mainstreaming of the biomass energy agenda in Africa and within the World Bank and other donors. The World Bank's biomass energy portfolio has increased from \$20m in 1996 to some \$120m in 2003. The Millennium Gelfuel Initiative is one of RPTES' innovations for which three commercial plants are already operational in Zimbabwe, South Africa and Malawi with interest from 20 other countries. The strategic agenda for *traditional* biomass in Africa is already set while the *modern* biomass agenda is still evolving and needs further work. Within this context, AFTEG will under-

take a work program of traditional and modern biomass activities that will include the following main five activities: (1) traditional energy sector: “Final Sustainability Demonstration” (2) national biomass energy inventory and sustainable development strategy (Senegal and Ethiopia, three countries per FY thereafter); (3) biomass energy investments for poverty alleviation (assistance to Bank operational task teams within PRSPs and CAS context); (4) knowledge management and capacity development on biomass energy, poverty alleviation and climate change nexus; and (5) RPTES Program exit strategy (selective support to UEMOA and SADC organizations to accelerate the participation of African institutions in the delivery of program activities).

*Discussion.* The ensuing discussion about the Africa energy strategy and regional program presentations was dominated by the definition of “mainstreaming” of rural/renewable energy and biomass into the World Bank’s operations. The Africa energy team clarified that mainstreaming implies that (i) a new approach to energy access in Africa has been developed, (ii) an analytical foundation has been established (iii) every new energy project in Africa explores how renewables and biomass can be included, and (iv) awareness about these agendas has been raised. Biomass and renewable energy are important pillars of the Minimum Infrastructure Platform as well. The discussion also touched upon the need to integrate forestry and land use policies with energy policies since biomass will remain a source of energy for decades to come and biomass can generate significant incomes for the poor. It was also pointed out that the focus of interventions in Africa has to be on rural energy rather than only rural electrification.

## **ASIA ALTERNATIVE ENERGY PROGRAM (ASTAE)**

Mr. Noureddine Berrah, Lead Energy Specialist in the World Bank’s East Asia energy team, presented ASTAE’s ongoing projects particularly in Sri Lanka and China. He emphasized that ASTAE support goes beyond projects into building consensus and developing analytical methodologies. He outlined the Energy, Poverty and Gender (EnPoGen) study that has done case studies of ASTAE projects in China, Sri Lanka, and Indonesia to explore linkages between access to electricity, poverty alleviation, and gender equity. Its key finding is that electricity, even in small quantities, has significant impacts on quality of life and gender equity that can be achieved through alternative energy technologies where they are least cost. Mr. Berrah also outlined ASTAE’s Energy Efficiency and Water Supply Utilities project (Hubei province, China) which the Chinese government is asking the Bank to present to water utilities in other provinces.

Mr. Christian Delvoie, Sector Director of the World Bank’s East Asia Infrastructure Department, outlined the East Asia energy strategy and ASTAE’s place in it. Each segment of the East Asia energy market demands a different mix of World Bank business. The Bank is doing capacity building and institution building in the IDA countries (Cambodia and Laos), supporting restructuring in the “crisis countries” (the Philippines and Indonesia), taking a programmatic approach in the fast-growing countries (China and Vietnam), and providing top-notch technical advice to the “graduated countries” (Thailand and Malaysia). Policymakers in East Asia are demanding a coherent paradigm from the World Bank for addressing both growth *and* poverty.

Alternative energy has to be seen within the perspective of this wider agenda. ASTAE has a strong track record for mainstreaming alternative energy in Asia, particularly influencing government strategies in the Philippines, China, and Vietnam with regard to renewables. East Asia is the biggest user of GEF funding today. The findings of the Management Review of ASTAE conducted over the past year sup-

ports the broad impact of ASTAE. In addition, alternative energy is mainstreamed in the World Bank's East Asia operations but not yet in all client countries.

Mr. Delvoie tabled three key issues related to the future focus and configuration of ASTAE for the consideration of the donors. First, on ASTAE's focus, he proposed that the definition of Alternative Energy should be broadened to include the poverty/access agenda. Second, on ASTAE's institutional location, he tabled ASTAE as a window in ESMAP or as a window in (East) Asia. The East Asia team has a preference for the latter (South Asia would also be covered while the program management will remain located in East Asia). Finally, on management modalities, he proposed to shift from a unit with dedicated staff separate from the Asia Energy Practice to a "multi-donor program/partnership" to promote alternative energy which is now recognized as an important business segment within the Asia energy practice. A coordinator would be recruited on a "co-terminus" basis to manage the program with more autonomy to promote the program agenda and achieve optimal use of funds.

Ms. Penelope Brook, the World Bank's Energy Sector Manager for South Asia, emphasized that sector reform and governance were at the center of the Bank's energy sector agenda in South Asia, given the high cost to the economy of tariff distortions and highly inefficient systems. The alternative energy agenda is deeply constrained by the slow progress on sector reform and governance. As a consequence, the South Asia team pulled back from the ASTAE program over the past year as it was unable to leverage the contribution it was making to ASTAE. The South Asia team continues to make efforts to nest the alternative energy and access agenda in sector reform.

In his commentary, Mr. Paul Hassing of DGIS, the Netherlands, expressed disappointment at the past year's miscommunications between the World Bank East Asia energy team and DGIS regarding ASTAE's management. He noted that the issues have since been resolved and a new ASTAE strategy for the next 4 to 5 years is now under development after time lost due to the miscommunications. The Bank team apologized for the miscommunication and expressed satisfaction that the outstanding issues have since been resolved.

The definition of Alternative Energy was also debated with the ASTAE team stating that it has used the term to mean renewable energy and energy efficiency. A new definition could exploit the synergy between renewable energy and access. There was broad agreement that a wider definition of Alternative Energy should be considered in developing a medium term strategy for ASTAE. The location of ASTAE in East Asia while covering both East Asia and South Asia was accepted.

## **ENERGY SECTOR MANAGEMENT ASSISTANCE PROGRAM (ESMAP)**

The ESMAP team—Ms. Dominique Lallement, Program Manager of ESMAP, Ms. Xiaodong Wang, and Mr. Kazim Saeed—gave a strategic overview of implementation progress on ESMAP's Business Plan 2002–2004. During 2002, the energy-poverty portfolio grew 30% in value, and the Africa portfolio grew to 25% of the portfolio in number of projects. Highlights from the ESMAP portfolio ranged from innovative rural service delivery mechanisms developed in Bolivia, the multi-sectoral and multi-country approach that has led towards power trade in the Nile Basin, to technical assistance on energy efficiency to water utilities in Brazil. Efficiency and quality improvements in ESMAP's proposal process have included reducing the proposal cycle from six months to ten weeks and leveraging selected activities closer to operations. Ms. Lallement pointed out that ESMAP has made downward adjustments in

its funding requirements given the gaps between the funding requirements listed in ESMAP's Business Plan 2002–2004 and the pledges from donors to date. She outlined the new agenda issues that ESMAP is beginning to address: operationalizing the energy-poverty agenda (in Africa and South Asia), the urbanization challenge, public/private partnerships, energy security, measuring results and evaluating impacts.

In his commentary, Mr. Peter Davies of DFID, the United Kingdom, commended ESMAP for its unique convening power and reputation for intellectual leadership in the energy community. ESMAP has consistently been able to retain a strategic vision underlying its specialized assistance and has kept an eye on the development impact of each activity. Much of the Bank's evolving thinking in energy has emerged from ESMAP work. Currently, important issues that should draw ESMAP's attention are: the reduction in the interest of global markets in developing countries, international energy security, and regional energy cooperation.

Mr. Davies expressed disappointment with the limited growth of the Africa portfolio given that it was expected to double in the past year. To increase ESMAP's efforts in generating its portfolio along its business plan, he pointed to the possibility of an even more pro-active approach to include more of client country concerns in particular. He also tabled the question of whether the cost of managing ESMAP (5% of annual contributions) was too low to allow the ESMAP management team to provide institutional leadership.

During the general discussion, donors echoed satisfaction with ESMAP's intellectual leadership on key issues and reiterated the need for greater work on Africa. ESMAP's high level of administrative efficiency was identified as a possible constraint on the program's ability to deliver more. The donors urged ESMAP to increase its staffing in order to increase its ability to provide intellectual leadership. The Netherlands expressed concern about the stagnant number of donors at ESMAP (Netherlands contributes 41% of funding) and appealed to other donors to consider increasing their contributions to ESMAP. It was agreed that ESMAP's management and all donors would make additional efforts to broaden the donor base. Greater measurement of the impact of ESMAP activities, more accurate classification of activities in the ESMAP portfolio, and reduction in the lag between the completion of each activity and the publication of its report were also pointed out as areas of further development. Donors also raised the need for new ideas, greater innovation, and for commissioning state-of-the-art activities rather than relying so extensively on the call for proposals process.

## **CONSOLIDATED BUSINESS PLAN OF ENERGY TRUST-FUNDED PROGRAMS**

Mr. Jamal Saghir presented a Consolidated Business Plan for 2004–2006 for the four ETFPs in response to the donors' request at the 2002 CG meeting for a coherent plan encompassing all the programs. Under a consolidated plan, the Africa energy group will continue to promote innovation and mainstreaming of access to modern energy, alternative energy, and biomass (traditional and modern) in order to expand its energy operations. The Asia group (both East Asia and South Asia) will continue to use the ETFP to support preparation and implementation of World Bank lending programs for the scaling up of alternative energy in innovative projects with strong poverty alleviation impacts. ESMAP will continue to implement the strategy and business lines of its Business Plan 2002–2004. All programs will take into account the four dimensions proposed by the TAG: intellectual leadership, innovation, knowledge management, and specialized technical assistance.

A total funding requirement of US\$72.1m for all four programs for 2004–2006 was tabled. Of this, the World Bank committed to provide US\$19m. Against the US\$53.1m sought from donors, pledges at this CG meeting totaled US\$19.1m. Mr. Saghir emphasized that the World Bank is committed to providing its portion of the funding to the ETFPs but the targets set for these programs may not be achievable without the additional contributions sought from donors. Many donors expressed their need for more detailed workplans for Africa and Asia to be submitted well ahead of the donor meeting before greater commitments of funding could be made.

## **Governance**

Ms. Anne-Charlotte Malm of SIDA, Sweden, presented the donors' views on the governance of the ETFPs and their expectations from the ETFPs as a whole. She stressed the importance of a clear, efficient and focused overall program which has the same objectives as the donors including what they are doing bilaterally. Through their involvement in the ETFPs, the donors would like to complement their own policy dialogues with developing countries and influence the World Bank's operations. The donors look to the World Bank for suggestions about how to improve the performance of each program. From the donors' perspective, it is crucial to receive a clear and complete picture of the World Bank's activities, including regular evaluations. This, in turn, would make it easier for these programs to be marketed to other donors. The donors would also like to see greater involvement of client countries possibly through interviews by the TAG or members-at-large of the client country policymakers. Overall, donors consider the CG meetings a very useful forum to learn about the ideas, activities and experience of the World Bank Group and other donors.

In the ensuing discussion, there was consensus that more client country representatives need to be invited to the CG meetings. Donors welcomed the participation of the Uganda delegation. The Uganda delegation expressed its appreciation for the opportunity to gain insight into the funding process so that they can develop more accurate expectations about funding. The Bank requested donors to suggest client country representatives who should be invited to subsequent CG meetings.

While donors took the view that the CG has smoothly evolved from an ESMAP CG to a joint CG for all four ETFPs, there was broad agreement that more donors are needed in this CG. The need for a high-level forum to discuss energy issues and define the agenda (and play a role similar to the World Water Council in the water sector) was also reiterated. The World Bank's Energy Forum was mentioned as a possible platform for such a group to meet.



# ANNEX 2: Activities Completed, Launched and Ongoing in 2003

## LAUNCHED PROJECTS IN 2003

Project Title	Country/Region	Funds Task Manager	Funds Approved	Allocated	Status
Exploring Opportunities for Improving Rural Energy Access	Afghanistan	Imran	\$50,000	\$0	Under Implementation
Enhancing Access and Rural Electrification—Costs and benefits, and Willingness to Pay	Pakistan	Haider	\$50,000	\$0	Under Implementation
Extending the Use of Gas to Inland Peruvian Provinces	Peru	Alba	\$10,000	\$10,000	Under Implementation
Resource Funds: A comparative Analysis (Revenue Management Proposal)	Global	Tordo	\$148,300	\$50,000	Under Implementation
Landfill Gas Utilization in Sub-Saharan Africa	AFR	Takahashi	\$5,000	\$5,000	Under Implementation
LCR Subsidy Review Study	LCR	Rysankova	\$50,000	\$50,000	Under Implementation
AFTEG Rural and Renewable Energy	AFR	Sanghvi	\$1,000,000	\$383,583	Under Implementation
Innovative Energy Efficiency Financing Mechanism	Poland	Lamech	\$300,000	\$200,000	Under Implementation
Alleviating Urban Energy Poverty in Latin America: The Brazilian Case	Brazil	Bacon	\$50,000	\$50,000	Under Implementation
Provision of Energy Services to the Poor	Tajikistan	Sharma	\$350,000	\$300,000	Under Implementation
Guidelines for Designing Energy Modules in Multi-Topic Household Surveys	Global	O'Sullivan	\$275,000	\$100,000	Under Implementation
Energy, Population and Environment Program	LCR	Alba	\$50,000	\$50,000	Under Implementation
GVEP Technical Secretariat Transition	Global	Lallement	\$82,600	\$82,600	Under Implementation
Ghana Energy PSIA of Energy Sector Reforms	Ghana	Keener	\$50,000	\$50,000	Under Implementation
Infrastructure Services to the Rural Poor	Mongolia	Rivera	\$260,000	\$260,000	Under Implementation
Multisectoral Operational Plan to Maximize Poverty Reduction Impact of Rural Electrification in Senegal	Senegal	Gouvello	\$100,000	\$100,000	Under Implementation
Innovative Financing Mechanism for Energy Efficiency	Mexico	Feinstein	\$250,000	\$250,000	Under Implementation
Energy Sector Strategy for Poverty Reduction and Growth	Djibouti	Bjerde	\$198,674	\$198,674	Under Implementation
Diesel Pollution Reduction Strategies for Cities	EAP/LCR	Shah	\$250,000	\$199,786	Under Implementation
Promoting Productive Uses of Electricity in Rural Areas	AFR	Sanghvi	\$195,000	\$195,000	Under Implementation
Pakistan—Household Impact Analysis of the Energy Sector Reform	Pakistan	Kojima	\$125,000	\$125,000	Under Implementation
Strategy to Expand Gas Distribution and Utilization	Turkey	Lamech	\$150,000	\$150,000	Under Implementation
Greater Mekong Sub-region Power Trade Strategy Meeting	EAP	Trembath	\$50,000	\$50,000	Under Implementation

Project Title	Country/Region	Funds Task Manager	Funds Approved	Allocated	Status
Impact on the poor of the Electricity Sector Reform in the Kingdom of Lesotho	Lesotho	Pawlowska	\$50,000	\$50,000	Under Implementation
Second World Forum on Energy Regulation	Global	Tenenbaum	\$85,000	\$85,000	Under Implementation
Toolkit for Scaling up Rural Energy Access	Global	Cabraal	\$50,000	\$50,000	Under Implementation
Review of ESMAP's Energy Sector Reform and Market Development Work	Global	Saeed	\$20,000	\$20,000	Under Implementation
Expanding SME Outsourcing Opportunities from Utility Sector Reform—A Survey of Eastern and Southern Africa	AFR	Armar	\$45,000	\$45,000	Under Implementation
Knowledge Transaction: Reducing Energy Costs in Water Supply Operations	Global	Armar	\$50,000	\$50,000	Under Implementation
Women in Mining Voices for Change Conference	Global	Strongman	\$49,900	\$49,900	Publication in Process
Developing a Sectoral Energy Poverty Index	Global	Sanghvi	\$50,000	\$50,000	Under Implementation
Central Africa Energy and Poverty Workshop, Cameroon, Chad, Congo, Cote d'Ivoire, Madagascar, and Niger	Cameroon	Lallement	\$200,000	\$200,000	Publication in Process
Revenue Management Seminar	Chad	Tordo	\$15,000	\$15,000	Publication in Process
Regional Workshop At Sidi Bernoussi, Morocco Dissemination of the Results of the ESMAP Sidi Bernoussi Industrial Park Study	Morocco	Mendonca	\$95,710	\$70,710	Under Implementation
Conference to Promote Low-cost Electricity Distribution and Reticulation Networks in Peri-urban and Rural Africa	AFR	Cosgrove-Davies	\$15,000	\$15,000	To be Closed
Capacity Building for the Electricity Authority	Cambodia	Sekse	\$101,000	\$101,000	Under Implementation
Improved Heating Stoves and Health Impact on Low Income Consumers	Mongolia	Kaufmann	\$30,000	\$30,000	Under Implementation
Scoping Study for Voluntary Green Electricity Schemes in Beijing and Shanghai	China	Berrah	\$50,000	\$50,000	Under Implementation
Renewable Energy Practitioner Workshop in South Asia	SAR	Cabraal	\$100,000	\$100,000	To be Closed
Energy Sector Strategy	Ghana	Iyer	\$50,000	\$50,000	Under Implementation
Assessment of Power Sector Reform Priorities in Selected Countries in Sub-Saharan Africa: A Survey of African Power Sector Decision-makers	AFR	Gaba	\$150,000	\$150,000	Under Implementation
Rural Electrification Policy Development and Conceptual Design of Energy Services Delivery Projects to Improve Rural Health and Education Service Delivery	Papua New Guinea	Pham	\$300,000	\$300,000	Under Implementation
Africa Rural and Renewable Energy Initiative (AFRREI)	AFR	Sanghvi	\$200,000	\$200,000	Under Implementation
<b>TOTAL</b>			<b>\$5,756,184</b>	<b>\$4,541,253</b>	

## COMPLETED PROJECTS IN 2003

Project Title	Country/Region	Task Manager	Funds Approved	Funds Allocated	Status
Economic Assessment of the Experience of Multi-Functional Platforms in Mali and design of an operational MFP program for the Senegal Rural Electrification Project	Mali/Senegal	Gouvello	\$50,000	\$0	Withdrawn
Energy Efficiency in Medium and Small Water Supply Utilities	Brazil	Armar	\$159,845	\$159,845	Closed
Removing Obstacles to Cross-Border Oil and Gas Pipelines	Global	Bacon	\$335,000	\$314,772	Closed
Oil Spills Occurrence Database, Modeling, Remediation and Prevention	ECA	Oduolowu	\$49,246	\$49,246	Closed
Petroleum Transportation Corridors	AFR	Alba	\$150,659	\$150,659	Closed
Solar Market Development	Comoros	Plas	\$168,120	\$168,120	Closed
Energy Efficiency Program	Mongolia	Rivera	\$58,625	\$58,625	Closed
Multilateral Energy Sector Assistance to the EU Accession Countries	ECA	Hamso	\$33,866	\$33,866	Closed
Reservoir Management Workshop and Upstream Fiscal Systems	Vietnam	Svensson	\$66,000	\$66,000	Closed
Ecuador—Indigenous people's Training Program on Oil Development Projects	Ecuador	Alba	\$298,636	\$298,636	Closed
Household Energy, Air Pollution and Health	India	Lvovsky	\$119,122	\$119,122	Closed
Power Sector Regulation and Electricity Law	Vietnam	Lamech	\$324,571	\$324,571	Closed
Energy Development Report 2001	Global	Spencer	\$16,379	\$16,379	Closed
Evaluation of Bank Experience with Integrated Rural Electrification Projects—Seed Funding	LCR	Rysankova	\$5,276	\$5,276	Closed
Mitigation of Environmental and Social Impact of Oil and Gas Operations	LCR	Alba	\$170,159	\$170,159	Closed
Reducing Emissions from Three Wheeler Two-Stroke Engine Taxis	Bangladesh	Brandon	\$88,016	\$88,016	Closed
Lead Phaseout Initiative	Vietnam	Johnson	\$92,673	\$92,673	Closed
Energy-Environment Strategy	Bulgaria	Zaheer	\$221,936	\$221,936	Closed
Refining Industry in LCR—Sector Reform and Fuel Quality Improvement	LCR	Alba	\$489,675	\$489,675	Closed
Global Financing of Decentralized Rural Electrification	Global	Floor	\$4,808	\$4,808	Closed
Clean Coal Technology (Phase I)	China	Takahashi	\$79,799	\$79,799	Closed
Dissemination on Environmental Issues in the Power Sector	India	Imran	\$396,289	\$396,289	Closed
<b>TOTAL</b>			<b>\$3,378,700</b>	<b>\$3,308,472</b>	

## ONGOING PROJECTS IN 2003 (AS OF 2/10/04)

Project Title	Country/ Region	Task Manager	Funds Approved	Funds Allocated
<b>Publications in Process (36)</b>				
Women in Mining Voices for Change Conference	Global	John E. Strongman	\$49,900	\$49,900
Central Africa Energy and Poverty Workshop (Cameroon, Chad, Congo, Cote d'Ivoire, Madagascar, Niger)	AFR	Dominique M. Lallement	\$200,000	\$200,000
Revenue Management Seminar	Chad	Silvana Tordo	\$15,000	\$15,000
Water & Sanitation and Energy Public Private Partnership Operator and Investor Workshop	MENA	Anna Bjerde	\$60,000	\$60,000
	MENA	Anna Bjerde	\$60,000	\$60,000
Mainstreaming Gender into Energy Projects	Global	Waafas Ofosu-Amaah	\$7,000	\$7,000
Energy and Poverty Workshop (Francophone)	AFR	Dominique M. Lallement	\$250,000	\$250,000
Clean Fuels Africa Project: Phasing Out Leaded Gasoline in SSA Importing Countries	AFR	Eleodoro O. Mayorga Alba	\$256,997	\$256,997
Nigeria LPG Market Development and Access Expansion	Nigeria	Mourad Belguedj	\$345,756	\$345,756
Capacity building for national and provincial socially and environmentally sustainable management of coal resources in China	China	Charles A. Husband	\$350,000	\$350,000
Global Village Energy Partnership (GVEP)	Global	Dominique M. Lallement	\$686,441	\$686,441
Petroleum Revenue Management Conference	Global	Charles P. McPherson	\$238,204	\$238,204
Health Impacts of Traditional Fuel Use	Guatemala	Kulsum Ahmed	\$197,475	\$197,475
Initiating the Bank's Peri-Urban/Rural and Renewable Energy Activities	Nigeria	Malcolm Cosgrove-Davies	\$45,000	\$45,000
CDM-assist: A Collaborative Program to Build CDM Capacity in Africa	AFR	Mangesh Hoskote	\$49,987	\$49,987
Energy Efficiency in Urban Water Utilities in Central Asia: Central Asia The Uzbekistan Case.	Ede Jorge	Ijjasz-Vasquez	\$137,184	\$137,184
India—Environmental Policies for the State Power Sector—Rapid Assessment for Karnataka and Rajasthan	India	Mudassar Imran	\$222,750	\$222,750
Household Energy and Women's Lives: The Case of India	India	Douglas French Barnes	\$49,951	\$49,951
Central America Gender in Sustainable Energy	LCR	Jean-Claude Balcet	\$225,000	\$225,000
Heat Strategies in Low-Income Transition Countries	ECA Armenia	Sumter Lee Travers	\$293,291	\$293,291
Key Aspects of Energy-Environment/GHG Strategy	Macedonia	James Sayle Moose	\$56,070	\$56,070
Petroleum Sector Review	Nigeria	Charles P. McPherson	\$59,664	\$59,664

Training Program for Key Group Representatives From Indigenous People Regional Organizations/Rural Energy Development, Phase II	Bolivia	Eleodoro O. Mayorga Alba	857616	857616
Global Efficiency in Sidi Bernoussi Industrial and Peri-Urban Area	Morocco	Rene G. Mendonca	\$340,000	\$340,000
Energy Efficiency Operational Exchange Program	Global	Robert P. Taylor	\$299,907	\$299,907
Opportunity for Women in Renewable Energy Technology Utilization (Phase I)	Bangladesh	Nilufar Ahmad	\$188,979	\$188,979
Energy Sector Regulation (incl gas proj)	Poland	Rachid Benmessaoud	\$560,172	\$560,172
Opportunities for International Power Trade in the Nile River Basin I	AFR	Mangesh Hoskote	\$515,089	\$515,089
Energy Sector Reform—Phase I	Mexico	Charles M. Feinstein	\$402,000	\$390,446
South Africa Workshop—People's Power Workshop	South Africa	Arun P. Sanghvi	\$35,000	\$35,000
Coal Stove Improvement Program	Mongolia	Kazim M. Saeed	\$50,000	\$50,000
Country Programme—Phase II	Bolivia	Philippe J-P. Durand	\$1,330,846	\$1,330,846
National Biomass Programme	Bolivia	Philippe J-P. Durand	\$2,569,113	\$2,569,113
Rural Electrification & Power Reform in Central America	LCR	Douglas French Barnes	\$302,000	\$305,539
Malawi: Rural Energy Development	Malawi	Mangesh Hoskote	\$270,705	\$270,705
Regional Electricity Demand Management TA—Phase II	AFR	Kazim M. Saeed	\$101,823	\$101,823
Decentralized Rural Electrification	Cameroon	Kazim M. Saeed	\$249,999	\$249,999
<b>Under Implementation (88)</b>				
Exploring Opportunities for Improving Rural Energy Access	Afghanistan	Mudassar Imran	\$50,000	\$0
Enhancing Access and Rural Electrification—Costs and benefits, and Willingness to Pay	Pakistan	Waqar Haider	\$50,000	\$0
Extending the Use of Gas to Inland Peruvian Provinces	Peru	Eleodoro O. Mayorga Alba	\$10,000	\$10,000
Resource Funds: A comparative Analysis (Revenue Management Proposal)	Global	Silvana Tordo	\$148,300	\$50,000
Innovative Energy Efficiency Financing Mechanism	Poland	Ranjit J. Lamech	\$300,000	\$200,000
Ghana Energy PSIA of Energy Sector Reforms	Ghana	Sarah Keener	\$50,000	\$50,000
Alleviating Urban Energy Poverty in Latin America: The Brazilian Case	Brazil	Robert W. Bacon	\$50,000	\$50,000
LCR Subsidy Review Study	LCR	Dana Rysankova	\$50,000	\$50,000

Project Title	Country/ Region	Task Manager	Funds Approved	Funds Allocated
Infrastructure Services to the Rural Poor	Mongolia	Salvador Rivera	\$260,000	\$260,000
Provision of energy services to the poor in Tajikistan	Tajikistan	Raghuveer Y. Sharma	\$350,000	\$300,000
AFTEG Rural and Renewable Energy	AFR	Arun P. Sanghvi	\$1,000,000	\$383,583
Multisectoral operational plan to maximize poverty reduction impact of rural electrification in Senegal	Senegal	Christophe de Gouvello	\$100,000	\$100,000
Innovative Financing Mechanism for Energy Efficiency	Mexico	Charles M. Feinstein	\$250,000	\$250,000
Guidelines for Designing Energy Modules in Multi-Topic Household Surveys	Global	Kyran O'Sullivan	\$275,000	\$100,000
Energy Sector Strategy for Poverty Reduction and Growth	Djibouti	Anna Bjerde	\$198,674	\$198,674
Energy, Population and Environment Program	LCR	Eleodoro O. Mayorga Alba	\$50,000	\$50,000
GVEP Technical Secretariat Transition	Global	Dominique M. Lallement	\$82,600	\$82,600
Diesel Pollution Reduction Strategies for Cities	EAP/LCR	Jitendra J. Shah	\$250,000	\$199,786
Promoting Productive Uses of Electricity in Rural Areas	AFR	Arun P. Sanghvi	\$195,000	\$195,000
Pakistan—Household Impact Analysis of the Energy Sector Reform	Pakistan	Masami Kojima	\$125,000	\$125,000
Strategy to Expand Gas Distribution and Utilization in Turkey	Turkey	Ranjit J. Lamech	\$150,000	\$150,000
Greater Mekong Sub-region Power Trade Strategy Meeting	EAP	Barry Trembath	\$50,000	\$50,000
Impact on the poor of the Electricity Sector Reform in the Kingdom of Lesotho	Lesotho	Agata Pawlowska	\$50,000	\$50,000
Second World Forum on Energy Regulation	Global	Bernard W. Tenenbaum	\$85,000	\$85,000
Toolkit for Scaling up Rural Energy Access	Global	R. Anil Cabraal	\$50,000	\$50,000
Review of ESMAP's Energy Sector Reform & Market Development Work	Global	Kazim M. Saeed	\$20,000	\$20,000
Expanding SME Outsourcing Opportunities from Utility Sector Reform—A Survey of Eastern and Southern Africa	AFR	Amarquaye Armar	\$45,000	\$45,000
Knowledge Transaction: Reducing Energy Costs in Water Supply Operations	Global	Amarquaye Armar	\$50,000	\$50,000
Developing a Sectoral Energy Poverty Index	Global	Arun P. Sanghvi	\$50,000	\$50,000
Regional Workshop At Sidi Bernoussi, Morocco Dissemination of the Results of the ESMAP Sidi Bernoussi Industrial Park Study	Morocco	Rene G. Mendonca	\$95,710	\$70,710

Assessment of Power Sector Reform Priorities in Selected Countries in Sub-Saharan Africa: A Survey of African Power Sector Decision-makers	AFR	Kwawu Mensan Gaba	\$150,000	\$150,000
Capacity Building for the Electricity Authority	Cambodia	Rebecca C. Sekse	\$101,000	\$101,000
Landfill Gas Utilization in Sub-Saharan Africa	AFR	Masaki Takahashi	\$5,000	\$5,000
Design and Pilot Testing of Capacity Building Product line for SME Utility Service Providers in West Africa	AFR	Amarquaye Armar	\$150,000	\$150,000
Improved Heating Stoves and Health Impact on Low Income Consumers	Mongolia	Rachel Kaufmann	\$30,000	\$30,000
Scoping Study for Voluntary Green Electricity Schemes in Beijing and Shanghai	China	Noureddine Berrah	\$50,000	\$50,000
Energy Sector Strategy	Ghana	Subramaniam V. Iyer	\$50,000	\$50,000
Rural Electrification Regulation Framework	Philippines	Selina Wai Sheung Shum	\$230,000	\$230,000
Rural Electrification Policy Development and Conceptual Design of Energy Services Delivery Projects to Improve Rural Health and Education Service Delivery	Papua New Guinea	Anh Nguyet Pham	\$300,000	\$300,000
Development of Pro-poor National Heat Pricing and Billing Policy	China	Robert P. Taylor	\$249,880	\$249,880
Africa Rural and Renewable Energy Initiative (AFRREI)	AFR	Arun P. Sanghvi	\$200,000	\$200,000
Rural Infrastructure in Chile: Improving Efficiency and Reaching the Poor	LCR	Jennifer J. Sara	\$15,000	\$15,000
Governance of National Oil Companies	Global	Charles P. McPherson	\$10,000	\$10,000
Rationing Energy in a "Rational" Way	Global	Luiz T. A. Maurer	\$50,000	\$50,000
Expanding Rural Access to Infrastructure	Nigeria	Malcolm Cosgrove-Davies	\$48,000	\$48,000
Power Sector Reform in Africa: Assessing the Impact on the Poor and Influencing Policy Decisions	AFR	Robert W. Bacon	\$186,000	\$186,000
Energy Poverty and Access	Yemen	Kyran O'Sullivan	\$447,980	\$320,000
Sustainable and Efficient Energy Use to Alleviate Indoor Air Pollution in Poor Rural China	China	Enis Baris	\$1,110,000	\$447,168
Stimulating the Market for Family-Hydro for Low-Income Households	Ecuador	Philippe J-P. Durand	\$141,000	\$141,000
Source Apportionment of Fine Particulates in Developing Countries	Global	Todd M. Johnson	\$295,000	\$295,000
Village Power Partnership for Latin America and the Caribbean (VPP-LAC)	LCR	Dana Rysankova	\$210,740	\$210,740
Policy and Strategy for the Promotion of Renewable Energy Resources	Nicaragua	Clemencia Torres	\$250,000	\$250,000

Project Title	Country/ Region	Task Manager	Funds Approved	Funds Allocated
Pioneering New World Bank Approaches in Support of Sustainability in the Extractive Sector	Global	Jeffrey Davidson	\$210,000	\$210,000
Capacity Building and Policy Assessment in Indoor Air Pollution	Global	Todd M. Johnson	\$45,900	\$45,900
Women's Energy Enterprise:Developing a Model for Mainstreaming Gender Into Modern Energy Service Delivery	Ghana	Kofi-Boateng Agyen	\$70,000	\$35,287
Good Practice Case Study in Integrating Environment into Gas and Oil Pipeline Projects: Experiences Based on the Bolivia-Brazil Gas Pipeline	Bolivia/Brazil	Juan D. Quintero	\$117,000	\$117,000
Regional Approaches to Energy Sector Reform and Renewable Energy Development in Small Island Economies	LCR	Charles M. Feinstein	\$160,000	\$60,000
Opportunity for Women in Renewable Energy Technology Utilization in Bangladesh (Phase II)	Bangladesh	M. Iqbal	\$220,000	\$220,000
Energy From Landfill Gases for the LAC Region: Best Practice and Social Issues	LCR	Horacio Terraza	\$694,664	\$533,092
Workshop on Rural Energy and Sustainable Development	Cote d'Ivoire	Koffi Ekouevi	\$10,000	\$10,000
Azerbaijan—Natural Gas Sector Restructuring and Regulatory Reform	Azerbaijan	Alan F. Townsend	\$230,000	\$230,000
Lessons on Offgrid Electricity, Business Development Services and Microcredit (Seed Funding)	Nicaragua	Marialisa Motta	\$15,000	\$15,000
Energy Efficiency in Water Utilities—Seed Funding	China	Salvador Rivera	\$9,993	\$9,993
Cambodia—Renewable Energy Action Plan	Cambodia	Rebecca C. Sekse	\$308,000	\$308,000
Regulatory Issues of Off-Grid Energy Service Delivery as Part of National Rural Rlectrification Strategies	LCR	Clemencia Torres	\$150,000	\$150,000
Access of the Poor to Cleaner Household Fuels in India	India	Kseniya Lvovsky	\$100,000	\$100,000
Technical Assistance to Proposed Expansion of Solar-Net Village Program	Honduras	Clemencia Torres	\$197,000	\$187,000
China: Policy Advice on Implementation of Clean Coal Technology projects. Phase II	China	Masaki Takahashi	\$50,000	\$50,000
LCR—Low Income Energy Assistance	LCR	Quentin T. Wodon	\$150,000	\$150,000
Brazil—Rural Electrification Strategy	Brazil	Jayme Porto Carreiro	\$250,000	\$250,000

Assessing the Impacts of Energy Sector Reform on the Poor	Global	Robert W. Bacon	\$430,000	\$285,915
Mexico—TA for Long-Term Program for Renewable Energy Development	Mexico	Charles M. Feinstein	\$100,000	\$100,000
South Asia Urban Air Quality Management Strategy	SAR	Masami Kojima	\$195,000	\$195,000
Lithuania—Heating Supply to Small Cities/Towns	Lithuania	Gary Stuggins	\$278,441	\$278,441
Nicaragua—Pilot Commercialization of Improved Cookstoves	Nicaragua	Clemencia Torres	\$185,000	\$185,000
Developing Regional Clean Air Networks	Global	Jian Xie	\$900,000	\$900,000
Developing Financial Intermediation Mechanisms for Energy Efficiency Projects in Brazil, China and India	Global	Robert P. Taylor	\$1,525,904	\$609,904
Alternative Energy Applications (Seed Funding)	Global	Patrick Labaste	\$8,027	\$8,027
Vietnam—Policy Dialogue Seminar and New Mining Code	Vietnam	Paulo De Sa	\$150,000	\$150,000
Towards Formulating a Rural Energy Strategy	Bangladesh	Douglas French Barnes	\$310,000	\$228,542
Philippines—Village Power Fund and Incubator for Renewable Energy Enterprises	Philippines	Selina Wai Sheung Shum	\$371,500	\$371,500
Power Trade in Nile Basin Phase II	AFR	Mangesh Hoskote	\$504,000	\$504,000
Advancing Modern Biomass Energy Opportunities and Challenges	Global	Boris Enrique Utria	\$232,640	\$232,640
Clean Air Initiative in Sub-Saharan African Cities	AFR	Chantal Reliquet	\$210,000	\$210,000
Development of a Regional Power Market in West Africa	AFR	Michel E. Layec	\$253,792	\$253,792
Regional Electricity Market: Mekong Basin Power Pool Phase II	EAP	Barry Trembath	\$430,733	\$430,733
Best Practices for Grid Electrification—Phase II	Global	Douglas French Barnes	\$279,860	\$279,860
Gas Flaring Reduction	Global	Bent R. Svensson	\$86,408	\$86,408
<b>TOTAL</b>			<b>\$18,208,746</b>	<b>\$14,755,175</b>



# Annex 3: Reports Published in 2003

## FORMAL REPORTS

Report No.	Project No.	Project Title	Country/Region	Task Manager
262/03	PO63170	Sustainable Transport Options for Sri Lanka: Vol I; Greenhouse Gas Mitigation Options in the Sri Lanka Power Sector: Vol II; Sri Lanka Electric Power Technology Assessment (SLEPTA): Vol. III	Sri Lanka	Munasinghe
263/03	PO75756	India: Access of the Poor to Clean Household Fuels	India	Kojima/Lvovs
264/03	PO77689	Stakeholder Involvement in Options Assessment: Promoting Dialogue in Meeting Water and Energy Needs: A Sourcebook.	Global	JR Davis
265/03	PO75196	Reducing Energy Costs in Municipal Water Supply Operations. "Learning-while-doing" energy M&T on the Brazilian frontlines (report was published jointly thus it does not carry ESMAP's cover)	Brazil	Armar
266/03	PO77595	Energy and Poverty Reduction: Proceedings from a Multi-Sector and Multi-Stakeholder Workshop. Addis Abata, Ethiopia, October 23-25, 2003.	AFR	Lallement/Durix
267/03	PO68523	China: Air Pollution and Acid Rain Control. The Case of Shijazhuang City and the Changsha Triangle Area.	China	T. Johnson
268/03	PO82773	Energy and Poverty Reduction: Proceedings from South Asia Practitioners Workshop How Can Modern Energy Services Contribute to Poverty Reduction? Colombo, Sri Lanka, June 2-4, 2003	SAR	Cabraal
269/03	PO67826	Vietnam's Petroleum Sector: Technical Assistance for the Revision of the Existing Legal and Regulatory Framework for the Petroleum Sector	Vietnam	Svensson
270/03	PO69828	Why Liberalization May Stall in a Mature Power Market: A Review of the Technical and Political Economy Factors that Constrained the Electricity Sector Reform in Thailand 1998-2002	Thailand	Albouy/Sae
271/03	PO60433	A Review of ESMAP Energy Efficiency Portfolio	GLB	Wang
272/03	PO52260	Corporalization of Distribution Concessions Through Capitalization	Ghana	Hoskote
273/03	PO74557	Energy and Environment Review	Turkey	Moose/Takat
274/03	PO64743	Private Sector Participation in Market-Based Energy-Efficiency Financing Schemes. Lessons Learned from Romania and International Experiences.	Romania	Atur/Meyer
275/03	PO69992	Reducing Emissions from Motorcycles in Bangkok	Thailand	Shah

## TECHNICAL REPORTS

Report No.	Project No.	Project Title	Country/Region	Task Manager
030/02	PO73842	Memoria Taller de Electrificación Rural (CD Only)	Nicaragua	Terrado
032/03	PO23879	Zambia—Power Sector Restructuring Program: Technical Assistance to ZESCO	AFR	Savary
033/03	PO48500	Sub-Saharan Petroleum Products Transportation Corridor: Analysis and Case Studies	AFR	Bacon
034/03	PO4963	Russia Pipeline Oil Spill Study	Russia	Oduolowu
035/03	PO6531	Cross-Border Oil and Gas Pipelines: Problems and Prospects	GLB	Bacon
036/03	Special Request	Guatemala: Household Fuel Use and Fuel Switching	Guatemala	Kojima
037/03	PO75883	Monitoring and Evaluation in Rural Electrification Projects: A Demand-Oriented Approach	GLB	Barnes
038/03	PO80210	Phase-Out of Leaded Gasoline in Oil Importing Countries of Sub-Saharan Africa: The Case of Ethiopia—Action Plan. (Clean Air Initiative/ESMAP)	SSA	Bultynck
039/03	PO80210	Phase-Out of Leaded Gasoline in Oil Importing Countries of Sub-Saharan Africa: The Case of Tanzania—Action Plan. (Clean Air Initiative/ESMAP)	SSA	Bultynck
040/03	PO80210	Phase-Out of Leaded Gasoline in Oil Importing Countries of Sub-Saharan Africa: The Case of Mauritania—Action Plan. (Clean Air Initiative/ESMAP) Elimination du Plomb de l'Essence dans les Pays Importateurs de Pétrole de l'Afrique Sub-Saharienne: Le Cas de la Mauritanie—Plan d'Actions	SSA	Bultynck
041/03	PO80210	Phase-Out of Leaded Gasoline in Oil Importing Countries of Sub-Saharan Africa: The Case of Mali—Action Plan. (Clean Air Initiative/ESMAP) Elimination du Plomb de l'Essence dans les Pays Importateurs de Pétrole de l'Afrique Sub-Saharienne: Le Cas du Mali—Plan Actions	SSA	Bultynck
042/03	Special Request	Household Energy Use in Developing Countries: A Multi-country Study. (Printing/editing paid by ESMAP)	Global	Heltberg/Kojima/ Bacon
043/03	PO82773	Knowledge Exchange: Online Consultation and Project Profiles from South Asia Practitioners Workshop. Colombo, Sri Lanka, June 2-4, 2003.	Global	Cabraal/Gratwick
044/03	PO70684	Sub-Regional Conference on the Phase-out Leaded Gasoline in East Africa, June 5-7, 2002. Working Paper #9. (Clean Air Initiative/ESMAP)	SSA	Reliquet/Bultynck
045/03	PO70684	Second Steering Committee: The Road Ahead. Clean Air Initiative in Sub-Saharan African Cities. Paris, March 13-14, 2003. Working Paper #12. (Clean Air Initiative/ESMAP)	SSA	Reliquet/Bultynck
046/03	PO70684	Elimination du Plomb dans l'Essence en Afrique Sub-Saharienne. Conference Sous Régionales Du Groupe Afrique de l'Ouest. Dakar, Senegal, March 26-27, 2002. Working Paper #8. (Clean Air Initiative/ESMAP).	SSA	Reliquet/Bultynck





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