

**Securing Energy for
Poverty Reduction
and Economic Growth**



Energy
Sector
Management
Assistance
Program



2005-2007 Business Plan

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Preface

Energy issues in developing countries are of mounting concern to all development partners. The lack of access to reliable, affordable and sustainable energy services is now recognized as a key deterrent to making substantial progress on economic growth and poverty reduction in the poorest countries, and in achieving the Millennium Development Goals. The increase in the level and volatility of hydrocarbon prices is putting pressure on governments to design new policies and programs to ensure energy security. The global environmental issue of climate change and the local issues of indoor and outdoor air pollution that affect the poor underscore the urgency of investing in clean energy systems and solutions.

The proposed ESMAP Business Plan for 2005-2007 reflects the renewed commitment of the World Bank Group and its development partners to address the energy issues in a manner that will ensure progress towards energy security, towards the transition to a low carbon economy, towards accelerating access by the poor and in the poorest economies to reliable modern energy, and towards improving the performance of energy markets and the sector governance.

ESMAP's management is grateful to all those from developing countries and from the Bank Group and development partner organizations who have contributed to the conceptualization of the Business Plan and who have committed to make its implementation a success.

A handwritten signature in black ink, appearing to read 'D. Lallement', with a horizontal line underneath it.

Dominique Lallement
ESMAP Manager

EXECUTIVE SUMMARY



ESMAP

ESMAP Business
Plan 2005-2007

Energy Sector Management Assistance Program (ESMAP)

The statistics are well known and the reality is bleak: almost two billion people—one-third of the world's population—are living today without access to modern energy services. Almost half of the world's population relies on traditional biomass energy sources and use to meet their basic energy needs for cooking food; one to two million women and children die prematurely every year from the damaging effects of indoor air pollution. Lack of energy to store or process crops, to transport goods and people, to expand or sustain the activities of enterprises lead to massive lost opportunities for economic growth, employment, and poverty reduction in developing countries. With such numbers, it is clear that without improved access to affordable and adequate energy services, the Millennium Development Goals—first among them to halve global poverty by 2015—will not be met. ESMAP, through its comparative advantages—a global program; recognition as an innovator and knowledge builder; response capability; honest broker status;—is working to bridge that gap.

Mission Statement

ESMAP promotes the role of energy in poverty reduction and economic growth with redistribution in an environmentally responsible manner. Its work applies to low-income, emerging, and transition economies and contributes to the achievement of the Millennium Development Goals.

The goal of ESMAP is to provide energy solutions to reduce poverty. Its purpose is to improve access to affordable, adequate, reliable, and environmentally sustainable energy services to the poorest people and countries. This global technical assistance program provides policy advice and helps build consensus on sustainable energy development with governments of developing countries and economies in transition. ESMAP also contributes to the transfer of knowledge in energy sector management, technology opportunities, and the delivery of modern energy services to the poor. ESMAP is currently supported by 14 donors—11 bilateral donor agencies, the World Bank, the United Nations Development Program (UNDP), and the UN-Foundation. ESMAP's products have included specific energy related studies, advisory services; pilot projects, conferences, workshops, and roundtables, training, publications and websites.

The Global and Strategic Context

The 2005-2007 Business Plan is set against the backdrop of a particularly challenging environment including:

- The increased vulnerability of the supply of energy services due to the increased level and volatility of hydro-carbon prices and fast increasing demand for energy in developing countries.
- The ramifications of climate change—implementing the Kyoto Protocol means implementing a shift towards a low-carbon global economy, including the use of renewables.
- The minimum energy needs of the developing world—100 more million people a year will have to be served with modern lighting, power, and cooking fuels for the next 20 years, as compared to 40 million over the past 20 years.

- The gender factor—women’s roles as providers of food and agriculture labor involve some of the most energy-intensive activities, and make them the most affected by indoor air pollution and the lack of mechanical power. It also makes them the most vulnerable to energy scarcity—they are the most susceptible to hardships associated with diminished supplies of biomass energy.



Burned land site near electricity towers. Ruta 68, Valparaíso, Chile.

Building on Experience and Lessons Learned

The 2005-2007 Business Plan draws on ESMAP’s work until now. The experience from the implementation of the 2002-2004 Business Plan shows:

- Strong achievements in the thematic areas of rural electrification and renewable energy, innovative multi-sector approaches, indoor air pollution, urban air quality, energy efficiency as well as on developing monitoring and evaluation methodologies, and in leveraging policy and investments in selected areas. ESMAP also made significant progress in streamlining its proposal review and approval process.
- Weaker achievements in the areas of delivering energy services for the peri-urban poor, developing regulatory frameworks for decentralized energy, scaling up renewable energy, developing public-private partnership models, leveraging the policy impacts of revenue management, anticipating the impact of energy.

- Insecurity on the poor, and mainstreaming gender in energy.
- In addition, ESMAP continued to be challenged to provide intellectual leadership in capturing new agenda issues, expanding the Africa portfolio, and achieving more effective knowledge dissemination. Furthermore, ESMAP concluded that, given the relatively small size of the program, selectivity and concentration on fewer themes is preferred to increase its monitorable development impact.

Some lessons include:

- **Time Frame:** The three year time frame of the business plan, to bring in new activities and phase out others does not always tally with the cycle of the more complex activities and needs to be interpreted with some flexibility: at least five years of intensive work are at times needed to develop a solid body of work, and disseminate it effectively. ESMAP's substantial achievements with Measuring Energy-Poverty linkages, Lead Elimination, Indoor Air Pollution, Regional Power Market Integration, Rural Electrification and Renewable Energy Strategies, have been possible only because of continued work in these areas for five years or more, and even now, much more work is still needed.
- **Sampling Size:** The empirical and analytical work on a theme must be carried out across a sufficiently large number of countries, regions or circumstances to validate results, identify factors of success or failure, and provide criteria for replicability.
- **Leveraging:** Deepening the analytical and operational leveraging at the country level provides for higher probability of sustainable solutions.
- **Flexibility:** ESMAP needs to retain enough flexibility in its work program and resource allocation to have the agility to provide "Just In Time" responses and analyses, and to carry out quick assessments of emerging issues and situations.
- **Methodology:** ESMAP will adopt a **new method to manage its portfolio** of activities, instead of relying heavily on calls for proposals, a process which became cumbersome, did not generate as many new ideas as expected, and did not always ensure alignment with Bank and donors priorities.

The 2005-2007 Business Plan

The central underpinning of the 2005-2007 Business Plan is **securing energy for poverty reduction**. ESMAP will concentrate on the provision of energy access for the poor, on gender equity, and the focus on the poorest income groups in developing countries.

The 2005-2007 Business Plan will **respond to several key challenges** facing the energy sector to ensure that ESMAP's work contributes to the focus on implementation and results in the development community, in terms of accelerating the effective delivery of sustainable energy services in the poorest countries or for the poorest income groups, and that it contributes to achieve the MDGs. ESMAP will help determine ways to meet the following challenges:

- The increased instability of the energy environment for developing countries;
- The change in the structure of global energy demand, with the spatial shift from industrialized to developing countries and from the rural to the peri-urban/urban areas, and with the pressure to move to a low carbon global economy.
- The need to scale up renewable energy, in order to accelerate the transition to a low-carbon economy, increase access to energy services for the poor, and diversify energy portfolios, as well as achieve the commitments and action plans announced at the International Conference on Renewable Energies and Energy Efficiency in Bonn, 2004.
- Mobilizing financing for energy investments in order to scale-up the effective delivery of sustainable and environmentally responsible energy services in the poorest countries and/or for the poorest income groups and achieve MDGs.
- The transfer of knowledge for effective sector policy formulation, planning, and management, and for effective investment implementation.
- How to evaluate and measure outcomes of revised policies and capital investments.

Key Business Activities

Drawing from the experience and the lessons of implementation of the 2002-2004 Business Plan, and in response to the new challenges, ESMAP will limit its activities to **four key thematic programs**:

Two new areas:

- **Energy Security:** Design sector policies for the poorest countries and for the low income people that take into account factors of vulnerability or instability, such as the dependence on a few fuel resources, fuel price volatility, systems unreliability or income fluctuations; and
- **Renewable Energy:** Secure and diversify energy resource portfolios, increase the availability of energy services in un-served areas, in particular where the poorest people live, and accelerate the shift to a low carbon global economy.

Two areas that represent a deepening of work initiated in previous Business Plans:

- **Energy-Poverty:** Integrate results from previous projects and operational programs to reduce energy-poverty in the rural areas, synthesize substantial existing work, and expand activities in the peri-urban areas to respond to the demographic trends; and
- **Market Efficiency and Governance:** Accelerate the building-up of policy formulation, regulatory and implementation capacity; develop the capability of entrepreneurs, utilities and domestic financial institutions, in order to facilitate the mobilization of financing for investments and services.



Electricity towers installed 2800 meters over sea level in the Andes Mountains, Santiago, Chile.

Implementing the Business Plan

A New Operational Framework

ESMAP is adopting a **new Operational Framework** for this Business Plan which articulates the three main functions of ESMAP mandated by the Consultative Group (CG), and the Energy and Mining Sector Board of the World Bank Group. They include:

- A **think-tank** function to carry out cutting-edge analytical work.
- A **knowledge clearing house** function to distill and disseminate existing knowledge.
- An **operational leveraging** function to scale up investments in the development of energy services by development partners.

To implement this new Operational Framework, ESMAP will:

- Manage directly the bulk of the analytical think-tank activities (part of which may nevertheless be contracted out for execution) to ensure alignment with donors' and Bank's priorities;
- Limit certain topics to the distillation and dissemination of knowledge, to focus on impact with clients;
- Contract with the Bank's regional teams a three year Program for Policy and Operational Innovation to implement the key thematic programs with the goal to serve the clients' needs more directly and better align with their priorities;
- Facilitate the scaling up of investments with preparatory activities in the key thematic programs;
- Create a fund to explore new and innovative ideas to support "Just-in-Time" responses; and
- Carry out every two years an impact analysis of ESMAP- supported interventions.

Increase ESMAP's human resources, as follows:

- Increase its staffing with at least three additional specialists with qualifications aligned with the Business Plan priorities, bringing the core group from 5 to 8;
- Strengthen its partnerships with other global programs, in particular WSP, PPIAF, Cities Alliance, GVEP, and GNSD; and
- Retain a panel of ten experts from a wide range of expertise from developing and industrialized countries, from both the public and private sector and NGOs, to advise periodically, in cooperation with the TAG, on emerging energy issues, and provide client feedback.

Invest in knowledge transfer, instead of tagging it as a by-product of its portfolio activities, as follows:

- Develop a clearing house to distill knowledge and experience from a wide range of donors and other stakeholders.
- Launch a new *ESMAP's Knowledge Exchange* publication, consisting of short topical and “Just-In-Time” notes.
- Revamp its publication strategy, to accelerate the rate of dissemination and the visibility and accessibility of its publications.
- Develop training partnerships with universities and the World Bank Institute.
- Hold a bi-annual ESMAP Conference to disseminate the results of ESMAP’s work and report on impact analyses of ESMAP interventions.

Operational Challenges

The Implementation of the Business Plan includes:

- Aligning ESMAP priorities with donors’ and World Bank Regions’ in order to implement the thematic programs;
- Finalizing the funding arrangements;
- The timely delivery of the analytical work; and
- The revamping of the dissemination strategy.

Monitoring Implementation

This Business Plan will be monitored and evaluated at two levels —output level and impact/outcome level. The output level focuses on measures of success in business plan implementation. The key performance indicators, for example, will include the volume and overall quality of ESMAP activities, the range of actors and partners involved, and dissemination of outputs. The impact level M&E will examine the poverty and development outcomes that were attained as a result of ESMAP work. The key performance indicators, for example, may include the number of ESMAP policy recommendations adopted and implemented by client countries, level of follow-up investment; and capacity built in client countries.

Budget and Financing

The total budget for the Business Plan has been estimated at US\$40-45 million over three to four years. ESMAP’s management believes that the funding goal can be achieved as it has already confirmed financing commitments of US\$37.8 million for the Business Plan Implementation period, and agreements are almost completed for an additional US\$9.0million.

1

INTRODUCTION



ESMAP

ESMAP Business
Plan 2005-2007

Mission Statement

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The statistics are well known and the reality is bleak: almost two billion people—one-third of the world's population—are living today without access to modern energy services. Almost half of the world's population relies on traditional biomass energy sources and use to meet their basic energy needs for cooking food; one to two million women and children die prematurely every year from the damaging effects of indoor air pollution. Lack of energy to store or process crops, to transport goods and people, to expand or sustain the activities of enterprises lead to massive lost opportunities for economic growth, employment, and poverty reduction in developing countries. With such numbers, it is clear that without improved access to affordable and adequate energy services, the Millennium Development Goals—first among them to halve global poverty by 2015—will not be met. ESMAP, through its comparative advantages—a global program; recognition as an innovator and knowledge builder; response capability; honest broker status;—is working to bridge that gap.

The goal of ESMAP is to provide energy solutions to reduce poverty. Its purpose is to improve access to affordable, adequate, reliable, and environmentally sustainable energy services to the poorest people and countries. This global technical assistance program provides policy advice and helps build consensus on sustainable energy development with governments of developing countries and economies in transition. ESMAP also contributes to the transfer of knowledge in energy sector management, technology opportunities, and the delivery of modern energy services to the poor. Currently supported by 14 donors—11 bilateral donor agencies, the World Bank, the United Nations Development Program (UNDP), and the UN-Foundation, ESMAP is a unique forum to build consensus on energy policies, undertake innovative energy solutions, and facilitate the leveraging of incremental financing amongst development partners, public and private. ESMAP's products have included specific energy related studies; advisory services; pilot projects; conferences, workshops, and roundtables; training, publications and websites.

¹ The mission is essentially the same as the one adopted by the Interim Consultative Group of November 2001 in Lisbon. It stresses economic growth with wealth and income redistribution.

Securing Energy for Poverty Reduction and Economic Growth

The 2005-2007 Business Plan of ESMAP has been designed against the backdrop of a particularly challenging environment. On the one hand, the environment for the supply and use of energy services in developing countries is increasingly unstable –instability characterized by a wide range of conditions, from the increased levels and volatility of hydro-carbon prices, the increase in power outages due to the lack of expenditures on infrastructure and plant maintenance, the instability of regulatory regimes and financial markets, the macroeconomic uncertainties and climate change, to the political instability with a large number of countries involved in domestic or international conflicts. On the other hand, there is an increasingly strong consensus amongst developing countries and their partners that energy is a key input to achieve economic growth, improve the populations' standard of living, and reduce poverty. In that sense, there is strong agreement since the World Bank Summit on Sustainable Development (WSSD) of September 2002 that investments in energy services development must be increased, and that the effective delivery of energy services must be accelerated to achieve the Millennium Development Goals (MDGs).

The ESMAP Business Plan provides the strategic and operational framework for implementing the Program over the next three to five years and for achieving longer-term results. This implementation framework was accepted at the March 2005 Consultative Group of the donors. It has been anchored on three elements:

1. On the lessons learned from the implementation of the 2002-2004 Business Plan having taken into account conclusions from a systematic assessment of the achievements, strengths and weaknesses.
2. On the donors' request to maintain ESMAP as one of the focused instruments to catalyze their energy programs for more effective results than when they work independently.
3. The ideas emerging from the continued formal as well as informal dialogue with client country representatives, donors, private sector, NGOS, World Bank and other colleagues, dialogue that took place on various occasions throughout 2003 and 2004 (Box 2.1).

The Business Plan takes a forward looking view. It seeks to integrate emerging trends and anticipate forthcoming determining forces that will shape energy policies and strategies in developing and transition economies – trends which call for accelerating innovation in policy and project formulation.

The assessment of the 2002-2004 Business Plan is summarized in Chapter 2. In Chapter 3, the strategic context for the new Business Plan is articulated, as well as the revised thematic areas for implementation of the program, and the adjustments in operational procedures. The Business Plan concludes with the Financial Requirements for its implementation.

ESMAP's Clients, Products, and Comparative Advantage

ESMAP's **clients** are developing countries, where it works with Governments, public and private energy organizations, and NGOs. ESMAP strives to meet their needs for unbiased policy dialogue and analytical work; for expertise for up-stream but in-country activities. ESMAP's clients can benefit from ESMAP's neutrality to investigate and discuss difficult policy issues; from its ability to provide support for the development of new business models and innovation, such as renewable energy and efficiency; from its capacity to summarize experience, world-wide experience and best practices to guide future policy; and

from its ability to finance just-on-time technical assistance. The potential impact of ESMAP is based on the understanding that the transfer of knowledge to developing countries will increase their capacity at creating an enabling environment for investments in the efficient development of energy resources, and in the delivery and use of energy services.

ESMAP provides six main types of **products and services**:

- **Technical assistance** for policy formulation and program design to help governments, public institutions, private businesses, and civil society deliver their responsibilities on energy. These often lead to new legal and regulatory frameworks, sectoral strategies and implementation plans.
- **Analytical work** in the form of studies on global or sectoral issues.
- **Capacity building and training.** The majority of these activities involve workshops, and are carried out with developing country client organizations. The staff from these organizations are trained in analytical methodologies, policy analyses and formulation, and project design.
- **Knowledge generation and transfer.** It generates knowledge through its analytical work, policy and innovative project experience. It compiles knowledge from a wide range of sources. It disseminates knowledge through training workshops and seminars, courses, and its websites.
- **Publications.** All activities result in one or several publications, as a means to disseminate the knowledge and experience generated.
- **Identification of new investments:** The merit of ESMAP’s upstream work is to lead to new investments. These are identified as a result of sector strategies and pilot projects.
- **Project Innovations:** Either in design concept or in financing or implementation mechanisms.

The results of ESMAP’s analytical work, knowledge generation and transfer, and innovative projects are primarily used by governments and other organizations —public or private—in developing countries. ESMAP’s knowledge products are also used by the broad community of donors directly associated or not with the program in the formulation of their own development cooperation policies and programs in energy. A wide array of other stakeholders (Table 1.1) from academia, the private sector, and non-governmental organizations draws on ESMAP’s work to define their own activities.

ESMAP’s **comparative advantage** lies in its ability to be an honest broker, a partnership, and a pioneer/innovator. As *an honest broker*, it takes on issues in a way that is balanced and aims to generate the greatest benefits for developing countries. It provides a “safe space” for at times difficult policy discussions. The analytical work of ESMAP is known for its objectivity and quality. ESMAP’s policy advice and reports are valued as not being biased by commercial or political interests. This is due to the multi-donor funding resources as well as the administrative procedures within ESMAP to monitor and control the quality of the activities conducted under the program through peer review and the oversight of the Energy and Mining Sector Board.

Table 1.1: Use of ESMAP Products by Various Energy Stakeholders

Stakeholders	Use of ESMAP products
Bilateral and other multi-lateral Donors, such as UNDP and Regional Development Banks	<ul style="list-style-type: none"> a. Use the “space” to ask the “difficult questions,” and think about future energy issues and policy. b. learn from the Bank’s and others’ experience so that policy can be rapidly improved, to obtain summaries of experience, world class analysis and summaries of best practice to guide future IFI and bilateral policy. c. To obtain intellectual leadership on new agenda issues such as renewable energy, indoor air pollution, energy security. d. to map who is doing what and where the gaps are, for instance in research, that bilaterals can fill and avoid duplication.
WB Regional Energy Units (a) In country (b) in Washington	<ul style="list-style-type: none"> a. to obtain technical assistance and funding for up-stream but in-country activities for policy dialogue and analytical work. b. to obtain funds for downstream activities that enable the Bank to make loans to new areas (e.g. “renewable and alternative energy,” decentralized systems). c. to mobilize momentum and support from in-country stakeholders and the WB management. d. to encourage Task teams to take forward issues identified as important by ESMAP and its clients. e. to undertake global studies, not tied to a specific country program.
WB central Energy and Water Department and other professional units	<ul style="list-style-type: none"> a. to deliver global products. b. to provide inputs to clients countries and Bank teams for policy c. to support Task teams to take forward issues identified as important by ESMAP and its clients.
Others (NGOs, the private sector, academia etc.)	<ul style="list-style-type: none"> a. to provide support for up-stream but in-country activities for policy dialogue and analytic work. b. To draw on global knowledge and access to training c. to establish a bridge with the World Bank Group.

Source: TAG and ESMAP team.

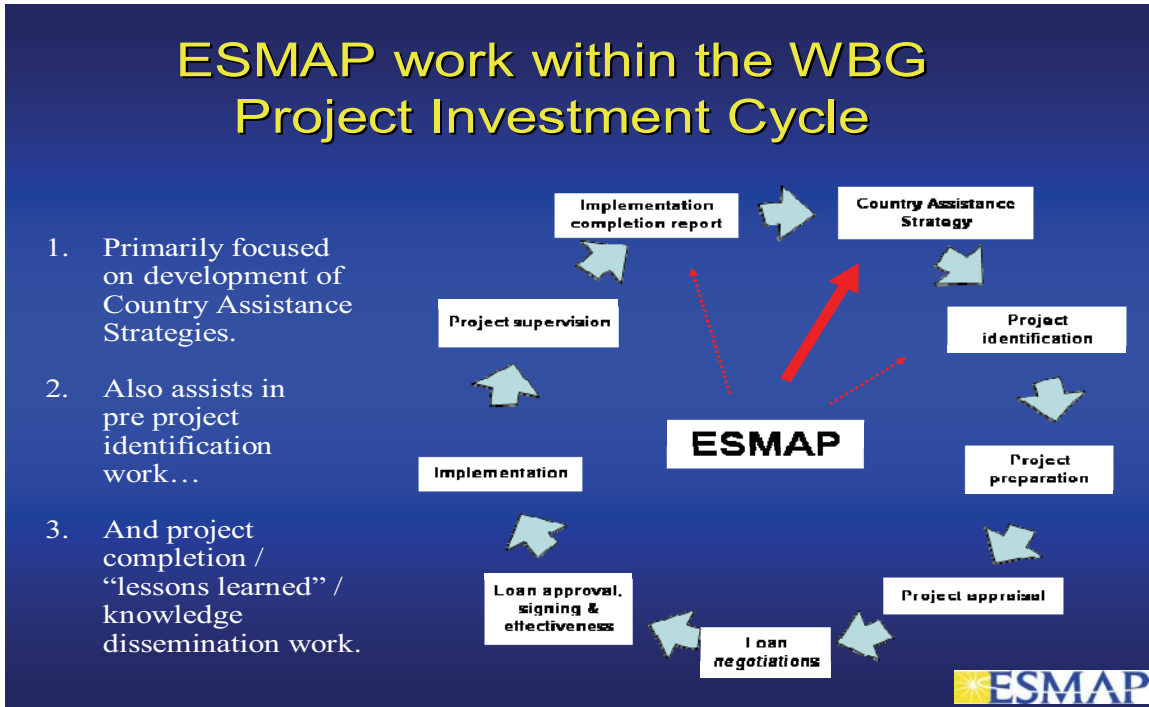
The Consultative Group (CG) of donors has confirmed ESMAP’s value-added as a *partnership* that serves the global energy practice. ESMAP has the merit of focusing on sustainable energy *per se* in the development debate. The CG also confirmed that ESMAP adds value in disseminating global energy knowledge and experience through its technical assistance to country governments beyond what bilateral or multi-lateral agencies can do, as it can draw on the best experiences available in the world. The donors’ contributions are valued not only for their financial resources, but also for their intellectual contribution to the policy agenda, and for their willingness to work as partners on the development of a common operational agenda which can be implemented through the respective institutions’ work programs.

As a *pioneer and innovator*, ESMAP, contributes to introduce and test new ideas into investment programs, to leverage new strategies and business development. Since ESMAP resources are used and transferred as grants, this is at no cost to the recipient country institutions.

How Does ESMAP Fit within the World Bank Group Activities?

As compared to the other energy trust funded programs managed by the World Bank –namely the regional programs for Asia (ASTAE) and Africa (AETF)– ESMAP’s distinctive feature is to finance mainly activities up-stream of the World Bank project cycle, yet essential for the successful design and implementation of the project (Diagram below). This includes ensuring that energy is included in the country poverty reduction and assistance strategies, fostering the right policy environment for successful investments, testing of new energy services delivery mechanisms, capacity building of policy makers and

energy services providers. For example, within its business plan, ESMAP has the capacity to stimulate new programs in all Regions of the World Bank Group for new types of projects and policy priorities, such as renewable energy and energy efficiency. It also works in complementarity with other trust funded infrastructure programs, in particular PPIAF, WSP, Cities Alliance and Devco.



2

RETROSPECTIVE REVIEW: Stocktaking on Implementation of the 2002-2004 Business Plan



ESMAP

The 2002-2004 ESMAP Business Plan aimed to continue ESMAP's work that had already proved important for the formulation of more effective energy policy in developing countries, to strengthen some parts of the program, and to develop some new areas that might eventually become core areas of research. This section provides a summarized critical assessment of the business plan accomplishments and areas that require further attention. A more detailed review is included in Annex 2.

Major components of the 2002-2004 Business Plan

The 2002-2004 Business Plan was anchored on the 1998 ESMAP Strategy which identified three strategic directions for ESMAP: increasing access to energy services, providing efficient energy services through the development of energy markets, and ensuring the environmental sustainability of energy services.

However, the concept of "energy access" was extended to "energy poverty," concentrating on the one hand, on the inter-linkages between energy poverty, market development and the environment, and on the other hand, on the application of energy services for consumptive, social, or productive uses, in order to achieve the Millennium Development Goals (MDGs), in particular in education, health, income generation, and environment. Another feature of the 2002-2004 Business Plan was to concentrate the policy and capacity building work on countries, which did not have as yet an "organized energy sector."

The 2002-2004 Business Plan had identified six core business lines under the following three strategic and cross-cutting areas:

- Energy-Poverty: the development of the Global Village Energy Partnership, and analytical work to deepen energy-poverty linkages;
- Market Development: the Impact of Reform on the Poor;
- Energy and Environment: Indoor Air Pollution; and
- Cross-cutting Areas: Measurement methodologies and knowledge dissemination.

In addition, work initiated under the first business plan was to continue in the areas of: Energy Service delivery mechanisms for rural energy access, gender and energy, strengthening reform, regional market integration, energy-environment reviews, and the mitigation of social and environmental impacts of energy infrastructure development. The work on rural and renewable energy strategies was to be closely linked to the poverty reduction framework; market reform work was to be focused on the poorest countries; upstream oil and gas development, and rapid energy-environment appraisals for which there was no expressed demand, was to be phased out.

In addition, the program was to contribute to resolving several operational issues, in particular the strengthening of the Africa portfolio, the need to shorten the proposal approval and funding process, and the need to encourage innovation and provide intellectual leadership in certain specific areas. The total cost of the 2002-2004 Business Plan was estimated at US\$40 million, increasing from US\$11.5 million in year 1, to US\$13.1 million in year 2, and US\$15.4 million in year 3. This represented a small increase as compared to the initial budget estimate for the 1999-

2001 Business Plan of US\$35.6 million. Actually, the funds raised over the 2002-2004 period were US\$25.8 million, substantially above the US\$17.5 million achievement for the 1999-2001 periods, but still short of the expectations.



Coal merchants in Beijing, China.

In order to monitor and evaluate the implementation of the Business Plan, a framework was proposed to, and agreed by the CG which distinguished two levels of monitoring and evaluation activities: the **output level**, which included such indicators as the volume and overall quality of the portfolio, the range of actors and partners involved in ESMAP activities, the dissemination of products, the volume of resources mobilized, and the managerial efficiency in terms of administrative overheads and budget execution; and the **impact level**, which included such indicators as the volume of citations and references in the literature, the mainstreaming of ESMAP's strategies and policy recommendations by development partners, the level of investments catalyzed as a result of ESMAP's work, the capacity built in countries for replicating future policy or pre-investment work.

Box 2.1: The Global Village Energy Partnership

ESMAP also delivered successfully on the development and operationalization of the Global Village Energy Partnership (GVEP), which had been retained at the request of the donors as one of the key elements of the Business Plan, with the goal of catalyzing energy stakeholders to increase their activities on modern energy services for economic growth and poverty reduction, in rural, peri-urban, and urban areas. This emphasis was fully justified in light of both the need to give increased attention to the linkages between energy services and poverty reduction to achieve the MDGs, in particular in Africa, and the political momentum building-up for the World Summit on Sustainable Development (Johannesburg, September 2002). In addition to coordinating the development of the partnership concept, and initially hosting the Technical Secretariat, ESMAP supported the first phase of implementation with regional and country-level activities in Africa, Latin America, and in India, as well as thematic workshops with practitioners. In 2004, ESMAP successfully transferred the Technical Secretariat to a new host organization, the International Technology and Development Group (ITDG), located in the UK. It continues to support the Technical Secretariat, with both financing of the host organization and partnership manager and expert resources in certain areas. As of October 5, 2004, more than 440 organizations have committed to working collectively to increase modern energy access by signing the GVEP's Statement of Principles and participating in country level activities. GVEP is now moving towards the full implementation phase to assist countries implement energy-poverty action plans and innovative pilot activities on energy services delivery. ESMAP is presently engaged in country level activities in 8 countries, 4 in Africa and 4 in Latin American, and is working on the preparation of a regional workshop for East Asia with other partners; these are activities, which will be fully implemented under the new Business Plan (Chapter 3). While the effort required from ESMAP on GVEP was considerable, it also gave ESMAP and the World Bank the opportunity to expand on networking and partnerships, in particular with private sector energy stakeholders and NGOs, on which they can capitalize for the future. Nevertheless, this effort created a strain on ESMAP's primary functions to undertake analytical and knowledge management work.

Accomplishments of the 2002-2004 Business Plan: Strengths and Weaknesses

Given the difficulty in doing a quantitative assessment of the outcomes of a program like ESMAP, its management undertook five major portfolio reviews; the results are summarized in Box 2.2. The experience from the implementation of the 2002-2004 Business Plan shows:

- Strong achievements in the thematic areas of rural electrification and renewable energy, launching the Global Village Energy Partnership which aims at scaling up energy services for poverty reduction (Box 2.1); developing innovative multi-sector approaches, indoor air pollution, urban air quality, energy efficiency as well as on developing monitoring and evaluation methodologies, and in leveraging policy and investments in selected areas. ESMAP also made significant progress in streamlining its proposal review and approval process.

Box 2.2: Reviews of ESMAP Portfolio

ESMAP's management commissioned five portfolio and evaluation reviews on the following portfolios: energy efficiency, rural and renewable energy, regional power trade, sector reform and market development, and gender and energy (see also Box 2.3). The reviews were conducted by ESMAP staff and by a consultant hired by the Technical Advisory Group (TAG). In addition, these reviews were complemented by periodic assessments by the TAG to the Consultative Group (CG), and audit reports.

Energy Efficiency (EE). ESMAP support for improving EE during 1997-2004 amounted to about 6 million USD and has been focusing on four critical areas. The first areas involved conducting pilot activities in improving EE in the industrial sector, for example, applying the monitoring and targeting (M&T) approach in the industrial sector, reducing energy costs in water utilities, and engaging the private sector in the industrial parks in LCR, ECA, East Asia, and North Africa. The second area consisted of developing energy-efficient and cost-effective urban heating strategies, for example, in ECA, China, and Mongolia. Another theme concerned developing innovative EE financing mechanisms, for example, in Romania. Finally, there was a dissemination of experience through global cross-exchange of experience and lessons. The conclusion is that ESMAP should evaluate what has been learned over the past five-six years on Bank EE activities, and propose new ways forward.

Rural and Renewable Energy. ESMAP funded renewable energy projects for as total of about 9 million USD. ESMAP has actively supported in the RE in four critical areas. Technical assistance was provided for RE policies and action plans, for example, in Cambodia, Mexico, Nicaragua, the Philippines, and Vietnam. RE business models were also developed and demonstrated in Bolivia, Comoros, and Peru. ESMAP also was involved in demonstrating innovative financing mechanisms from both supply and demand side, for example, piloting consumer credit mechanisms for solar home systems in Kenya, and creating financing mechanisms for small and medium enterprises in Bolivia. The issues of promoting productive use applications of RE also was an issue addressed during the business plan. Some examples of these activities are passive solar heating for rural schools in Bolivia, ICT services from solar in Honduras, and ice-making from micro-hydro in the Philippines. ESMAP support also catalyzed World Bank lending pipeline on RE/EE through pre-investment analytical work, pilot projects, and increased commitment and momentum from client countries and Bank managers. Many ESMAP projects are scaled up through follow-up investment from WBG, donors, governments, and the private sector.

Sector Reform and Market Development. ESMAP has conducted a draft review of reform and market development in 4 countries in its portfolio. This includes Bolivia, Poland, Thailand and Ghana. The conclusions of the review is that ESMAP was more effective in advancing reforms through long term in-depth interventions compared to smaller isolated ones. A major lesson was that ESMAP should concentrate on taking the lead in mainstreaming issues of access, public benefits, and the environment into the power sector reform agenda.

Regional Power Trade. This review was financed by ESMAP and completed by a consultant for the Technical Advisory Group. It covers projects executed before and during the period covered by the business plan. The report highlights the difficulty in monitoring effectiveness of the outcomes of ESMAP projects due to different regional contexts. In some cases an effective outcome may be the mobilization of political support for regional power trade, and in other regions it may be to provide technical assistance and a proper framework to carry out regional trade. But in general ESMAP's contribution to regional power trade has dependent upon the varying degrees of political support and local technical capabilities to carry out the work.

Gender and Energy. Gender and energy is a recent business line with activities spanning the last six years with a total budget of US\$1 million. The gender and energy review was to take stock of the level of work and the difficulties that ESMAP has experienced in developing projects. In general, the quality of the completed projects is quite high. Gender is a crosscutting theme, and many of the projects were carried out with assistance from units collaborating with mainstream energy. The conclusion of the review is that gender is an emerging issue for energy in the World Bank and will require some scaling up to have more influence in the main line energy units.

- Weaker achievements in the areas of delivering energy services for the peri-urban poor, developing regulatory frameworks for decentralized energy, scaling up renewable energy, developing public-private partnership models, leveraging the policy impacts of revenue management, anticipating the impact of energy insecurity on the poor, and mainstreaming gender in energy.
- On the administrative side, ESMAP also made significant progress in streamlining its proposal review and approval process (Annex 2, Graph A1.1).
- In addition, ESMAP continued to be challenged to provide intellectual leadership in capturing new agenda issues, expanding the Africa portfolio, and achieving more effective knowledge dissemination.

Some lessons include:

- **Time Frame:** The three year time frame of the business plan, to bring in new activities and phase out others does not always tally with the cycle of the more complex activities and needs to be interpreted with some flexibility: at least five years of intensive work are at times needed to develop a solid body of work, and disseminate it effectively. ESMAP's substantial achievements with Measuring Energy-Poverty linkages, Lead Elimination, Indoor Air Pollution, Regional Power Market Integration, Rural Electrification and Renewable Energy Strategies, have been possible only because of continued work in these areas for five years or more, and even now, much more work is still needed.
- **Sampling Size:** The empirical and analytical work on a theme must be carried out across a sufficiently large number of countries, regions or circumstances to validate results, identify factors of success or failure, and provide criteria for replicability.
- **Leveraging:** Deepening the analytical and operational leveraging at the country level provides for higher probability of sustainable solutions.
- **Flexibility:** ESMAP needs to retain enough flexibility in its work program and resource allocation to have the agility to provide "Just In Time" responses and analyses, and to carry out quick assessments of emerging issues and situations.
- **Selectivity:** ESMAP concluded that, given the relatively small size of the program, selectivity and concentration on fewer themes is preferred to increase its monitorable development impact.
- **Methodology:** ESMAP will adopt a **new method to manage its portfolio** of activities, instead of relying heavily on calls for proposals, which became cumbersome, did not generate as many new ideas as expected, and did not always ensure alignment with Bank and donors priorities.

Assessing the Impact of the Program

Although a complete quantitative assessment is not available, ESMAP management is seeing an increase in follow-up activities in client countries —key changes in government policies, in the development of new investments and adoption of new technologies, and in the increase in donors' financing. Examples of such impact from the indoor air pollution, urban air quality, energy efficiency, and private sector provision of energy services activities have been cited in the previous paragraphs. In addition, according to a review carried out by ESMAP's TAG, it concluded that ESMAP's policy studies in India were a key factor in changing the Government's policy towards renewable energy. The results is that today approximately 10,000MW of power is generated by renewable energy. The energy-poverty workshops mentioned above (Box 2.1) have triggered the integration of energy in PRSP updates and the integration of new projects or project components in several countries (Brazil, Honduras, Cameroon, Burkina, Madagascar, Mauritania, Senegal, Zambia, Mexico). This increased evidence of ESMAP's leverage suggests both increased alignment between ESMAP activities and World Bank's and other donors' activities, and the value of ESMAP to undertake activities that support the implementation of new investments.

Box 2.3: ESMAP Activities on Renewable Energy and Energy Efficiency:

From 1997 to 2004, ESMAP funded nearly 70 renewable energy (RE) and energy efficiency (EE) projects at a total cost of approximately US\$16 million—US\$9 million for RE and US\$7 million for EE.

ESMAP's support in the RE area has focused on five critical areas:

- 1) Providing technical assistance in RE policies and action plans, for example, in Cambodia, Mexico, Nicaragua, the Philippines, and Vietnam;
- 2) Demonstrating RE business delivery models, for example, in Bolivia, Comoros, and Peru;
- 3) Demonstrating innovative financing mechanisms from both supply and demand side, for example, piloting consumer credit mechanisms for solar home systems in Kenya, and creating financing mechanisms for small and medium enterprises in Bolivia;
- 4) Promoting productive use applications of RE, for example, passive solar heating for rural schools in Bolivia, ICT services from solar in Honduras, and ice-making from micro-hydro in the Philippines; and
- 5) Generating and disseminating knowledge, for example, on Best Practice of Micro-hydro Development.

ESMAP's support in improving EE has focused on four critical areas:

- 1) Conducting pilot activities in improving EE in the industrial sector, for example, applying the monitoring and targeting (M&T) approach in the industrial sector, reducing energy costs in water utilities, and engaging the private sector in the industrial parks in LCR, ECA, East Asia, and North Africa;
- 2) Developing energy-efficient and cost-effective urban heating strategies, for example, in ECA, China, and Mongolia; and
- 3) Developing innovative EE financing mechanisms, for example, in Romania; and Disseminating knowledge through global cross exchange of experience and lessons.

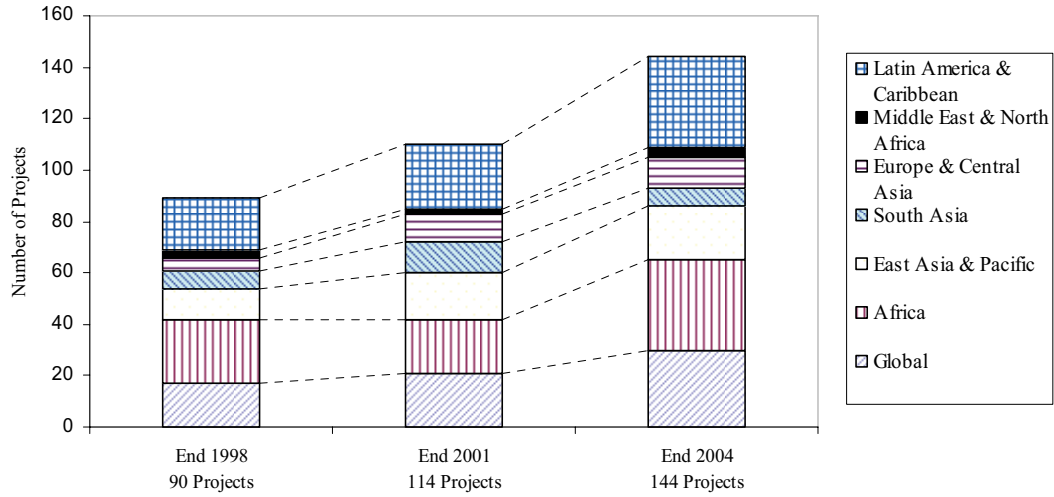
Portfolio: 2002-2004 Trends

Trends in Portfolio Composition

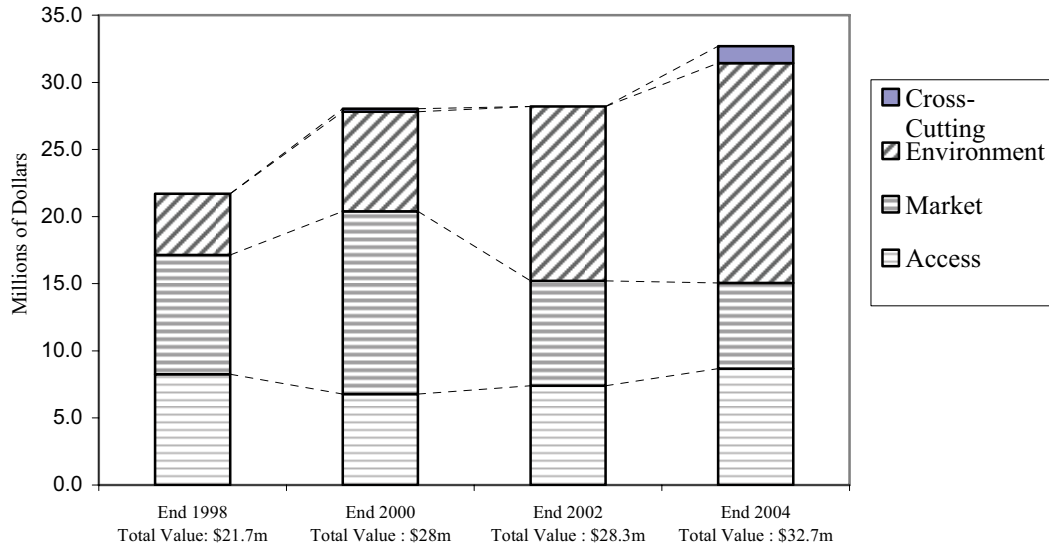
To better illustrate the evolution of the portfolio, the following graphs cover the starting situation at the end of 1998, and the period of the first two business plans, 1999-2001 and 2002-2004. The annual distribution of the portfolio is richer than the three-year summary.

Evolution of the Portfolio by Strategic Areas 2002-2004

By Number of Activities

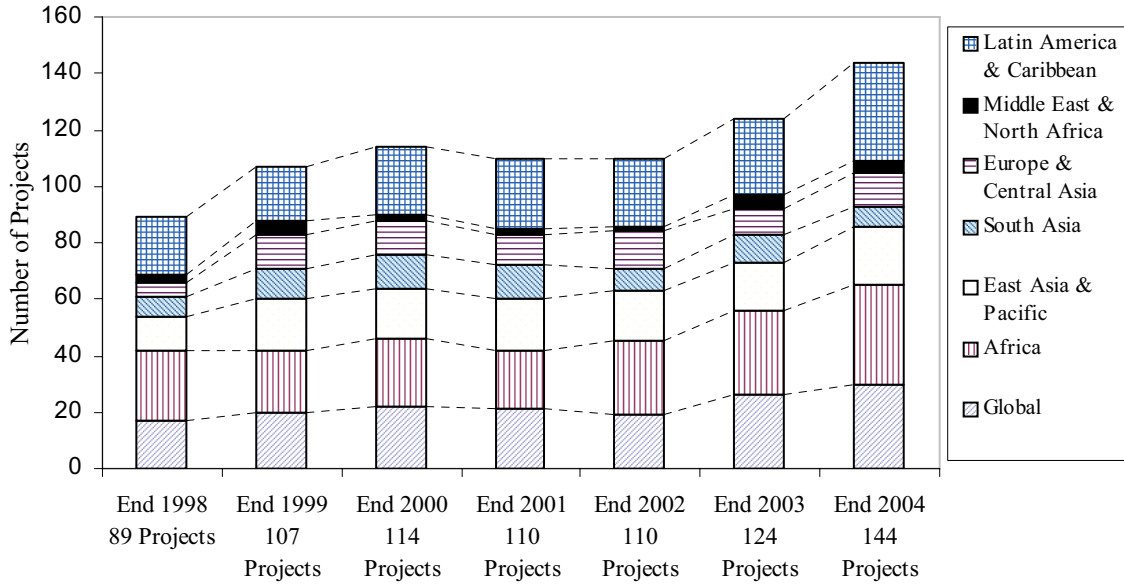


By Value of ESMAP Funding

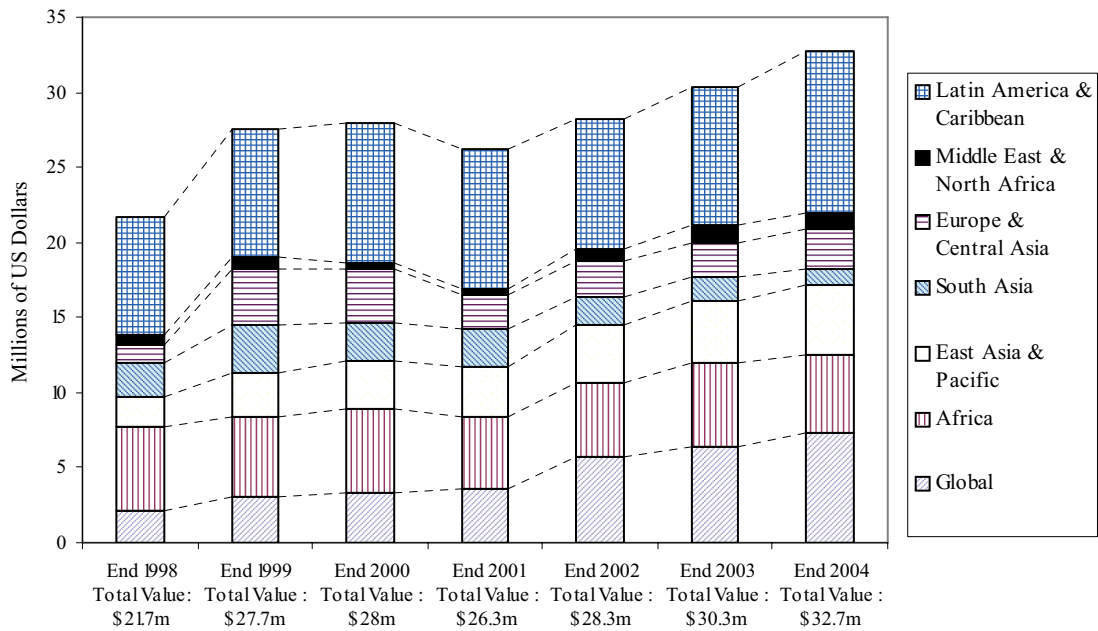


Evolution of the Portfolio by Regional Distribution 2002-2004

By Number of Activities



By Value of ESMAP Funding



Strategic Area	Number of Projects			Value of Projects(US\$thousand)		
	2002	2003	2004	2002	2003	2004
Cross-Cutting	3	3	1	\$82	\$375	\$45
Environment	12	10	10	\$3,724	\$2,160	\$825
Access/Poverty	21	19	19	\$1,193	\$2,459	\$3,199
Market	9	9	11	\$918	\$1,548	\$735
Total	33	50	39	\$5,917	\$6,542	\$4,804

During 2002-2004, the ESMAP portfolio grew both in dollar value and number of projects. The value of the portfolio rose from US\$26.3 million at the end of 2001 to US\$32.7 million at the end of 2004, a 24% increase. The number of projects also increased by 24%, from 110 projects in 2001 to 144 projects at the end of 2004, including 37 completed projects whose publication is in process. However, the average value of the portfolio between the first and second business plan grew from US\$27.8 million to US\$30.4 million, and the average size grew from 110 to 122 projects. This evolution in the portfolio is mainly due to (1) the prolonged publication process for several projects, and (2) the introduction of the Fast-Track Window for smaller projects, although an ex-post review revealed that they actually are not implemented faster. Details of the new approvals by strategic areas are provided on Table 2.1. The regional distribution of the portfolio by amount and number of projects kept the same pattern during 2002-2004 as in 1999-2001. The regional distribution of new approvals is given on Table 2.2.

Region	Number of Projects			Value of Projects (US\$ thousand)		
	2002	2003	2004	2002	2003	2004
AFR	10	15	7	\$1,197	\$2,181	\$677
EAP	5	7	5	\$2,005	\$841	\$1,015
ECA	2	3	3	\$18	\$880	\$150
GLB	7	9	10	\$631	\$771	\$1,008
LCR	7	7	13	\$1,609	\$1,015	\$1,923
MNA	2	4	0	\$457	\$494	\$0
SAR	0	5	1	\$0	\$360	\$30
Total	33	50	39	\$5,917	\$6,542	\$4,804

Trends in Resource Mobilization

Opening Balance as of January 1, 2002 and Resource Mobilization

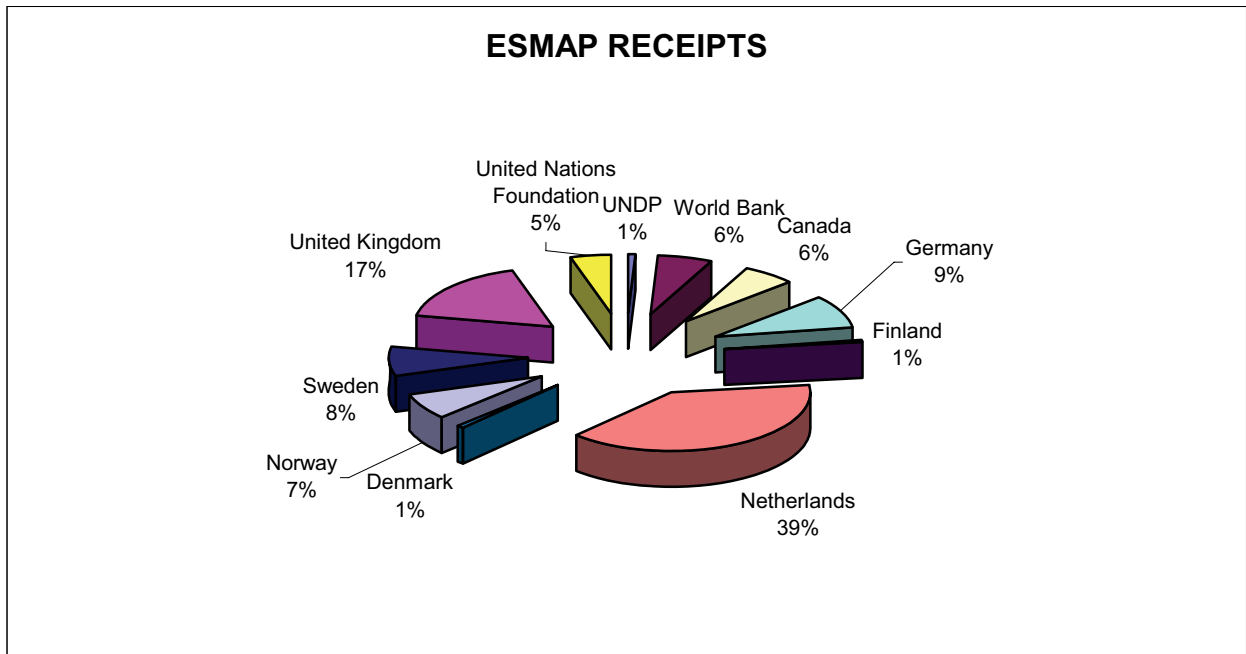
After taking into account, the expenditures and receipts, cash balances in ESMAP trust funds (including UNDP accounts) on December 31, 2001 amounted to US\$7.4 million (of which US\$101,024 in UNDP accounts). The cash balance not allocated to projects as of December 31, 2001 amounted to US\$3.8 million (of which US\$1.5 million was in core funds).

Of the estimated US\$40 million of financing requirements for the implementation of the 2002-2004 Business Plan, ESMAP mobilized only US\$25.8 million. Compared to US\$19.6 million mobilized for the implementation of the previous business plan of 1999 –2001, this was an increase of US\$6.2 million (of which about half for GVEP). As Table 2.3 shows, the implementation of the 2002-2004 business plan was initiated with US\$26 million secured upfront, representing a 35% shortfall in funds secured compared to the budgeted US\$40 million. Contrary to expectations, this initial gap could not be filled. The table below gives the donor-wise break down of ESMAP receipts from calendar year 2002 to 2004. The Netherlands maintained its position as the largest contributor to ESMAP, with 38% of total contributions, followed by the United Kingdom (16%) and Germany (9%).

**Table 2.3: ESMAP Receipts 2002-2004
(US\$ '000)**

	2002	2003	2004	Pledges for 2005	of which, % of Total		% of Total Receipts 2004	% of Total Receipts 2004	% of Total Core
					Total 02-04	Core 02-04			
						(US\$)			
UNDP	100.0	100.0	100.0	100.0	300.0	0.0	1.2%	1.2%	0.0%
World Bank	545.4	535.0	523.8	400.0	1,604.2	1,604.2	6.2%	6.1%	24.1%
Canada	737.8	277.6	563.8	0.0	1,579.2	0.0	6.1%	6.6%	0.0%
Germany	899.5	892.3	558.0	4,100.0	2,349.8	495.2	9.1%	6.5%	7.5%
Finland	82.8	0.0	108.0	112.0	190.8	190.8	0.7%	1.3%	2.9%
Netherlands	3,097.0	3,964.3	2,924.0	5,200.0	9,985.3	0.0	38.7%	34.3%	0.0%
Denmark	258.1	0.0	0.0	881.0	258.1	258.1	1.0%	0.0%	3.9%
Norway	0.0	1,150.0	700.0	700.0	1,850.0	925.0	7.2%	8.2%	13.9%
Sweden	636.4	1,023.2	396.6	1,600.0	2,056.2	597.0	8.0%	4.7%	9.0%
France	0.0	0.0	0.0	396.0	0.0	0.0	0.0%	0.0%	0.0%
United Kingdom	1,125.0	1,246.3	2,047.2	4,035.0	4,418.5	2,575.0	17.1%	24.0%	38.7%
United Nations Foundation	335.0	300.0	600.0	316.0	1,235.0	0.0	4.8%	7.0%	0.0%
Total	7,817.0	9,488.7	8,521.4	17,840.0	25,827.1	6,645.3	100.0%	100.0%	100.0%

Graph 2.1: ESMAP Receipts by Donor



Disbursements and Closing Balance

The total disbursements for the period 2002-2004 were US\$22.5 million as compared to US\$19.6 million for the period 1999-2001, representing an increase of 15% in comparison to the previous business plan, but only 72% of contributions received.

ESMAP's cash on hand, on December 31, 2004 amounted to US\$11.3 million of which US\$4.9 million core and the remaining US\$6.4 million non-core funds. This illustrates the trend in more non-core than core funds. Of the US\$11.3 million, US\$10.5 million were allocated to projects (of which US\$5.0 were committed to various contracted expenditures, US\$5.5 million uncommitted) leaving an unallocated balance of US\$814K.

3

THE 2005-2007 BUSINESS PLAN



ESMAP

ESMAP Business
Plan 2005-2007

Strategic context for ESMAP 2005-2007 Business Plan

This section highlights some of the more significant trends, challenges, issues and opportunities, which have had or will have a direct impact on the energy world and ESMAP's activities.

Significant Events in the External Environment

Four sets of events in the external environment are highlighted in terms of their relevance for the development of ESMAP's Business Plan: the momentum for reaching the Millennium Development Goals, the trend in higher hydro-carbon prices, the shift in the distribution of world demand for energy, and the shift towards a low-carbon global economy with the implementation of the Kyoto Protocol.

Momentum to Reach the Millennium Development Goals. The World Summit on Sustainable Development (WSSD) held in Johannesburg in September 2002 gave a renewed endorsement of the Millennium Development

Goals (MDGs) adopted by the United Nations General Assembly in September 2000 as a means to measure progress on reducing global poverty by half by 2015. The greatest merit of the MDGs is to have catalyzed the focus of development assistance on achieving substantial poverty reduction outcomes, even though there is increasing concern that the overall and specific goals will be unlikely achieved over the next 10 years. Progress towards achieving the MDGs will be assessed at a UN-Conference in September 2005 for which preparations are underway. Access to energy services, although not an MDG, has been increasingly recognized as an essential input to achieving the other MDGs, and will undoubtedly be discussed during the Conference. Energy has also been retained as the main theme for the 14th and 15th sessions of the United Nations Commission on Sustainable Development (CSD 14 and CSD15). ESMAP's analytical work and operational support, including the multi-sectoral projects at the country level, will contribute to maintaining the momentum on operational energy solutions to achieve the MDGs, improve the poor's livelihoods, and facilitate the scaling up of energy services including those based on renewable energy sources.

Box 3.1: The 2005-2007 Business Plan responds to key challenges facing the energy sector:

- How to respond to the increased instability of the energy environment for developing countries;
- How to respond to the change in the structure of global energy demand, with the spatial shift from industrialized to developing countries and from the rural to the peri-urban/urban areas, and with the pressure to move to a low carbon global economy;
- How to scale up renewable energy, in order to accelerate the transition to a low-carbon economy, increase access to energy services for the poor, and diversify energy portfolios, as well as achieve the commitments and action plans announced at the International Conference on Renewable Energies in Bonn;
- How to mobilize financing for energy investments in order to scale-up the effective delivery of sustainable and environmentally responsible energy services in the poorest countries and/or for the poorest income groups and achieve MDGs;
- How to transfer knowledge for effective sector policy formulation, planning, and management, and for effective investment implementation;
- How to ensure that ESMAP's work contributes to the focus on implementation and results in the development community, in terms of accelerating the effective delivery of sustainable energy services in the poorest countries or for the poorest income groups and contributes to achieve the MDGs; and
- How to evaluate and measure outcomes of revised policies and capital investments.

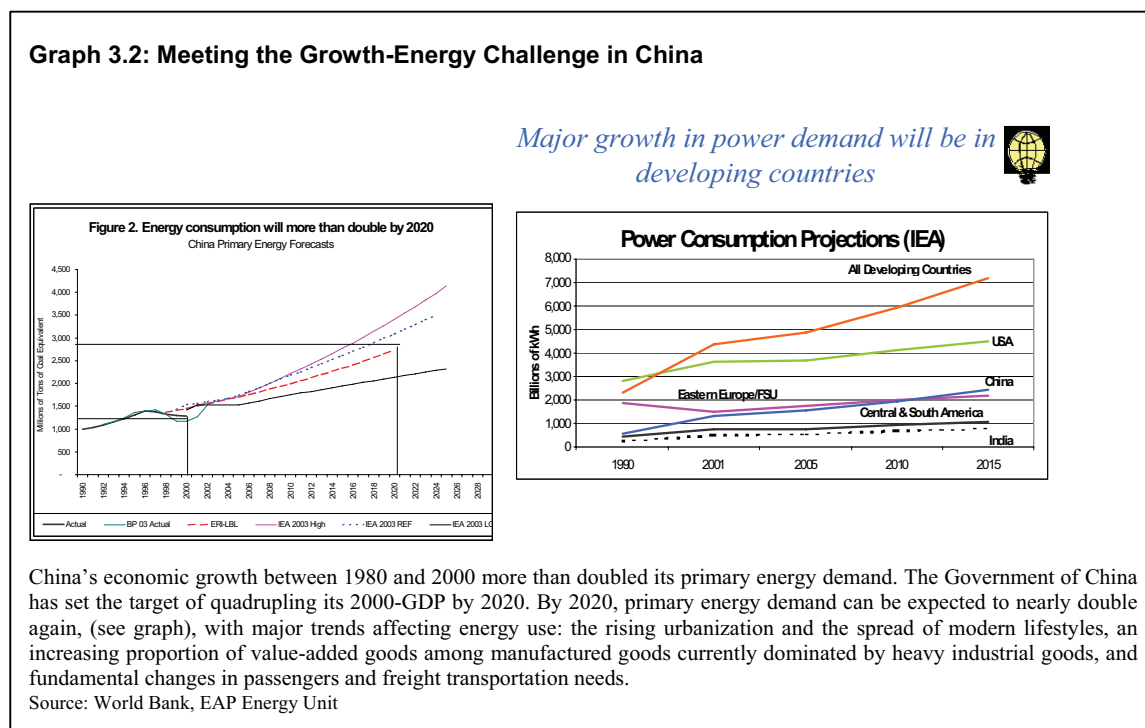
Trend in Higher Hydrocarbon Prices and Other Sources of Vulnerability. The volatility in oil prices since 2000, with acceleration since 2003, has radically changed the energy environment for developing countries, in particular for the poorest oil importing countries. While industrialized and most emerging market economies can cope with the trend in higher prices, the lower income economies face substantial downside risks, calling for global efforts to mitigate adverse impacts on the most vulnerable economies and income groups. Besides price shocks, other sources of vulnerability for energy services and infrastructure include the high degree of dependency on a limited number of sources of primary energy supplies, natural or man-made events, such as earthquakes, as was unfortunately the case in South Asia in December 2004, and domestic or international conflicts which still prevail in many parts of the developing world. New strategies are needed to assist developing countries in building their resilience to future price volatility, to reduce their energy intensity and dependency on hydrocarbon imports or single sources of supplies. The literature review carried out by ESMAP in 2004 confirmed that it is also essential to address the issue of vulnerability at the household and enterprise levels. This issue is directly linked to the issue of sustainable access to energy services. ESMAP will follow-up on the preliminary work done in 2004 (Bacon, March 2005) and complement the work done by others (including the World Bank DEC and PREM departments) on the macro-economic aspects of vulnerability. It will focus on the areas for which it has a comparative advantage: on micro-economic impact analyses, policy formulation, resource portfolio diversification, and other options to reduce vulnerability to external or internal shocks.

A Shift in the Distribution of Demand and the Demographic Challenge. The world is witnessing a substantial long-term shift in the distribution of energy demand. While two thirds of the world's energy demand still is in industrialized economies, it is projected to shift increasingly towards developing countries. In addition, within the developing world, the emergence of Asia, in particular China and India, as the new growth poles, is creating some tensions. With sustained growth rates of 8-10% and 30% of the world's population, China (Graph 3.2) and India have an energy demand which competes with that of industrialized economies, in particular on hydrocarbon markets, leading to new geo-political trends in order to secure long-term arrangements that will guarantee the flow of primary energy products. Besides the resulting pressure on prices, there is concern that a number of developing countries which today do not have the political strength for participating in such geo-political arrangements will be "left out" and subject to high prices and marketing arrangements dictated by the more dynamic economies.

In addition, most of the projections concur to predict that by 2020, more than half of the world's population will live in urban centers, that 70-75% will live in megalopolises of over 1.0 million people, and that 60% of the urban population will be below poverty level. About 40 percent of the world's poor — 1.3 billion people, a forgotten but important consumer group — already live in peri-urban areas. The resulting pressure on the demand for the various forms of energy services is not well known, nor the strategies to respond on time to this challenge. The implications for the energy sector are that demand growth will occur mainly in urban and peri-urban centers, and that the emphasis in the access issue is likely to shift to the peri-urban areas. The demographic trends call for revisiting fundamentally urban/peri-urban energy policies. This includes taking into account the perspective of the users who need the services in spite of their low income levels; the perspective of utilities charged to provide the services; the perspective of spatial planning in order to achieve greater energy efficiency; and the environmental perspective to ensure cleaner air at the global, regional and household level. ESMAP will undertake substantial work to palliate to the limited analytical work presently available on these issues and to the fragmented knowledge

of practical experiences. The issue of servicing the urban poor will therefore be one key components of the new Business Plan.

Part of the response to the demographic challenge will also be to better understand gender differences: women and men have different energy needs and requirements, use energy differently, and encounter different energy problems. Women are both *producers of energy resources and services* – gathering traditional biomass sources for fuel, spending human energy while they walk to gather fuel and water or to transport crops; and *users of energy resources and services* (for household fuel needs, the needs for fodder for livestock, the energy needs of small business and home industries). More than half of the world’s households cook with wood, crop residues, and untreated coal. Women’s roles as providers of food involves one of the most energy-intensive of household chores, and make them the group most affected by indoor air pollution. Women *as victims of energy scarcity* – because of their prime roles, they are also the most susceptible to hardships associated with diminished supplies of energy Women and men are confronted to competing energy priorities, such as fodder for livestock, an important aspect of livelihood and subsistence. ESMAP will therefore further develop a combination of knowledge dissemination and mainstreaming gender sensitivity in all relevant activities, in particular in the energy-poverty thematic program.



(Source: The World Bank, DEC)

Renewable Energy Development. The Earth’s climate is changing and human activities are generally believed to be a significant contributing factor, with a large share attributable to the consumption of carbon-emitting energy services. This is likely to increase climate variability, which in turn will adversely affect socio-economic sectors, including water resources, ecological systems, and human health. The cost of such technologies as wind, micro-hydro and in certain circumstances, solar has continued to decrease, making them competitive in certain circumstances, provided a level playing field with other technologies is developed. Further decreases in costs are

anticipated, as the market for the new technologies expands. Climate and environmentally friendly technologies and policies need to be adopted to ensure that the necessary level playing field exists. Many of these issues were debated both during WSSD and the Bonn Conference on Renewable Energies and Energy Efficiency in June 2004, at which many countries and institutions committed to promote environmentally responsible policies and scale up their investments in these technological solutions. ESMAP has had strong engagement in the environmental sustainability agenda for energy and will scale up its efforts, in particular to leverage new investments in this area by the World Bank Group and other financiers.

Implementing the Kyoto Protocol: The Shift Towards a Low-carbon Global Economy. Two major events will further facilitate progress on this shift, first the ratification of the Kyoto Protocol of the UNFCCC which entered into force in February 2005; and second, the likely policy change from the G8 under the Presidency of the United Kingdom which has declared *climate change* one of the two key themes for its presidency (the development of Africa being the other). While other entities such as the GEF and the Prototype Carbon Fund are better placed to finance investments, ESMAP proposes to capitalize on its policy expertise and knowledge, and to support the scaling up of investments in sustainable energy services based on renewables, both as a means to accelerate access to modern energy by the un-served or underserved, and as a means to meet the demands for local and global environmental sustainability.

ESMAP's Role in the Context of the World Bank Group

As a global program managed by the World Bank, ESMAP is obligated to assess its alignment with the World Bank Group and bilateral donors global and sector strategy and policies, while recognizing that it primarily serves client countries. In response to changes in the broad energy context, and in recognition of the key role of energy services for achieving the MDGs and for stimulating growth for poverty reduction, the Bank adopted in July 2003 an Infrastructure Action Plan. The Infrastructure Action Plan acknowledges the importance of access to quality energy services, among other infrastructure services, and emphasizes the need for policy and operational flexibility in recognition of the diversity of situations confronting developing countries. It also recognizes the increasing investment gap in developing countries between the estimated needs for investments and the financing available from the governments, international and bilateral financing institutions, and international private sector investors.

In line with the implementation objectives of this plan, the Bank Group launched an Initiative to Scale up Energy Services in March 2004, with the objective of defeating the current trend in an increase in the un-served populations. The Initiative to Scale-up Renewables and Energy Efficiency was approved by the Board in September 2004 as part of the response to the Extractive Industry Review. It is an effort to meet both the environment challenge of moving towards a lower carbon global economy and the access challenge, given the fact that many of the services based on renewable energy are modular and decentralized and can be provided where the access needs are the most acute. With these efforts, the World Bank Group aims to deliver on its commitment at WSSD and in other fora. While much of ESMAP's previous analytical work has contributed to facilitate the implementation of these initiatives, it proposes to intensify its technical assistance work to help countries revise their energy policies with a focus on access, reaching the MDGs, and on environmentally sustainable energy solutions. ESMAP will, support

their knowledge dissemination activities, pre-investment work particularly for renewable energy and efficiency, the operationalization of these initiatives, as well as the measurement of outcomes.

Program Strategy

The core objective of the 2005-2007 Business Plan is to **secure energy for poverty reduction**. The nexus -- energy-poverty, environmental sustainability, and market efficiency – which has been the architecture of the program since 1998 remains valid—but ESMAP will concentrate on the social dimension of the thematic areas retained for the business plan, with emphasis on energy services for the poorest income and on the gender dimension. This implies a significant shift in the content of ESMAP’s activities and in its operational framework. These are described later on in this section.

Evolution of Business Activities

Note that the description of the program’s activities as “business lines” which was used in the 2002-2004 Business Plan, has led to different interpretations, depending on the perspective of individual reviewers. For the 2005-2007 Business Plan, this description has therefore been

dropped. Instead, the content of the program is described in terms of thematic programs, and a new operational framework has been designed, corresponding to the three main functions of the program.

Drawing from the lessons of implementation of the 2002-2004 Business Plan, ESMAP will structure its activities into **four thematic programs** (see Graph 3.3):

Two new areas:

- **Energy Security:** Design sector policies for the poorest countries and for the low income people that take into account factors of vulnerability or instability, such as the dependence on a few fuel resources, fuel price volatility, systems unreliability or income fluctuations; and
- **Renewable Energy:** Secure and diversify energy resource portfolios, increase the availability of energy services in un-served areas, in particular where the poorest people live, and accelerate the shift to a low carbon global economy.

Two areas that represent a deepening of work initiated in previous business plans:

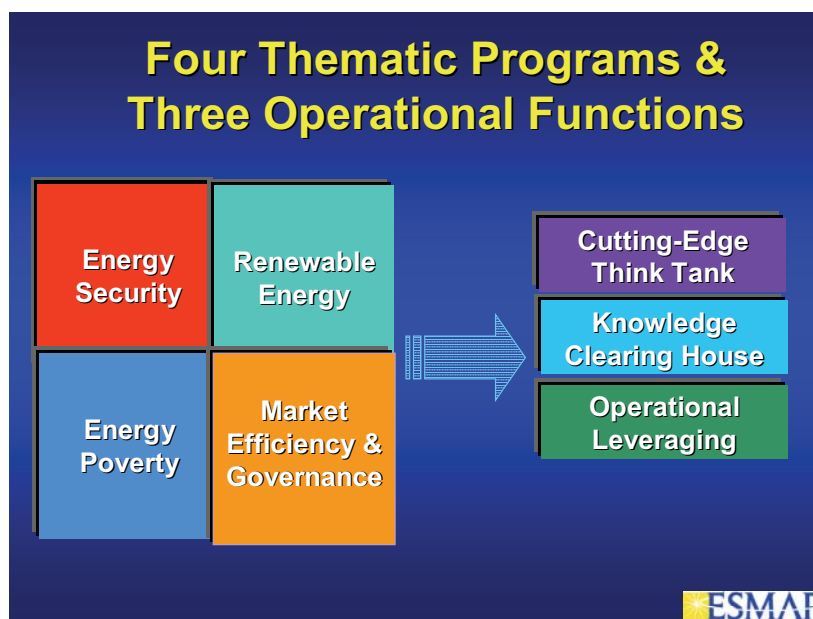
- **Energy-Poverty:** Integrate results from previous projects and operational programs to reduce energy-poverty in the rural areas, synthesize substantial existing work, and expand activities in the peri-urban areas to respond to the demographic trends; and

- **Market Efficiency and Governance:** Accelerate the building-up of policy formulation, regulatory and implementation capacity; develop the capability of entrepreneurs, utilities and domestic financial institutions, in order to facilitate the mobilization of financing for investments and services.

The **new Operational Framework** for this Business Plan articulates the three main functions of ESMAP mandated by the Consultative Group (CG) and the Energy and Mining Sector Board of the World Bank Group. They include:

- A **think-tank** function for creating knowledge on cutting-edge issues, which will be the basis for flagship publications to influence the energy agenda of the energy community;
- A **knowledge clearing house** function to distill, assimilate, exchange, and disseminate existing sector knowledge to a large group of development partners; and
- An **operational leveraging** function to ensure that the results from the analytical and knowledge work are integrated into country-level policy dialogues and the scaling-up of investments in energy services by development partners.

Graph 3.3: Thematic Areas Structure and Operational Functions



Each thematic program will contribute to one, two or all three of the main functions. This said, in order to ensure the completion of on-going thematic activities and the smooth transition to the new operational framework, the same “**up-in-out**” approach to activity entry and exit decisions has been applied. Key changes include:

- *Areas for further development:* Energy Trade. Stock-taking of the existing portfolio is needed prior to developing new activities, to assess in particular, whether they were efficiently designed, and the adjustments necessary to better respond to the need for increasing energy trade, as a least cost option to secure

energy supplies. Gender: there is also a need for a stock taking exercise to determine how to mainstream it in ESMAP's and others' activities, beyond increased knowledge dissemination and advocacy.

- *Core areas*: Energy Security, given the urgency to undertaking thorough analytical work on the impact of energy vulnerability, and on remediation options. Renewables, in relation to access, portfolio diversification, and environmental sustainability, becomes a main thematic program, and therefore, will have activities in all three areas. Energy Efficiency will be addressed under the Energy Security thematic area. However, further stock taking of past ESMAP's and others' work needs to be carried out, in particular to leverage more operational programs and investments and support the World Bank's and others' commitment to increase their financing of energy efficiency investments. Servicing the Peri-urban poor: to respond to the demographic trends. Decentralized Energy Services: engaging SMEs to mobilize domestic competencies and financing.
- *Areas moving from "think-tank" to knowledge management*: Indoor Air Pollution, Urban Air Quality, Revenue Management, Regional Power Trade, Monitoring and Impact Evaluation Methodologies: no longer amongst the main thematic or cross-cutting areas as the foundation work has been completed. Work on these topics will be limited to knowledge dissemination and Operational Leveraging.

During the Business Plan period, the content of these programs may be revised to take into account the new emerging trends that could be identified either under the consultative process described in the introduction, or through the feedback from the proposed panel of experts (see section on Human Resources below).

Thematic Programs

Thematic Program One: Energy Security

This is a new thematic program which will build up on the preliminary research undertaken in the last year of the 2002-2004 Business Plan. The trend in high and volatile hydrocarbon prices has been described above as one of the major event in the energy sector environment. The instability of petroleum prices has been largely studied in its macro-economic effects on oil exporting and oil consuming countries at the time of the previous oil price peaks; this work is being updated. Beyond its macro dimension, energy security, or energy vulnerability, is tightly linked with access to better energy services and poverty. Petroleum price pikes affect the poor directly through the increase in prices of kerosene, and indirectly through their impact on the price of consumer goods, electricity, and transport. The poor also pay the price of hydrocarbon price instability when un-employment results from the contraction of industrial or service activities. These effects may result in shifts in the structure of effective demand for energy services to "lower" forms of energy, causing the poorest to 'climb down' the energy ladder towards biomass resources; this in turn can generate a negative ecological impact. Vulnerability to price and other shocks also affects business development and private sector investments. This program, which will be implemented in cooperation with the DEC and PREM departments of the World Bank who have a deep knowledge of certain aspects of this issue, will initially include three main elements:

Analytical Work:

- To map out the **macro-economic impact of hydrocarbon price volatility**, including on public budgets and on revenue management, especially the impact on the social sector budgets which are key to the achievement of the MDGs. The objective is to be able to identify a typology of country situations, and facilitate the identification of mitigation policy options. This will require consultations with client countries, as well as with donors whose budgetary support financing could be linked to sector policy options.
- through empirical studies to **deepen the research and methodology for analyzing the impact of energy market instability on various income groups**, especially the poor, on various consumer groups, in particular transport, industry, agriculture; and SMEs; on geographically vulnerable regions; and to analyze mitigation policy options and formulate risk mitigation instruments, including resource portfolio diversification, energy efficiency programs, increased energy trade, and improved energy security pre-warning and rapid response mechanisms; one such study has already been commissioned for China.

Knowledge Tasks, including:

- Consultations with a wide range of stakeholders in order to document best practices in particular in industrialized countries, and to validate and disseminate the findings of the analytical work.
- Energy Efficiency. Increasing energy efficiency and improving energy intensity is urgently needed to improve energy security in developing countries, at the same time as higher levels of energy efficiency can contribute to the transition to a low carbon economy. In the effort to meet increased demand for energy at the least economic, financial, and environmental cost, improved energy efficiency complements and reduces the need for measures to increase energy supply. Few countries have legal or regulatory frameworks that encourage energy efficiency, neither in the construction, industrial, or transport sectors. Few urban development plans include energy efficiency criteria. Energy sector strategies should integrate the following components: (a) strengthening the demand management and distribution efficiency activities of energy supply enterprises; (b) developing competitive markets for energy services and energy-efficient technologies; (c) setting up or strengthening national, local, and energy sector entities to provide training and disseminate information on improving energy efficiency, and to facilitate the transfer of more energy-efficient technologies; and (d) putting in place and monitoring compliance with standards and codes for energy efficiency. Pricing policies that reflect the real costs of energy supply, that promote economically justified fuel switching and that encourage energy consumers to use energy efficiency are also needed.
 - A stock taking exercise of best practices from energy efficiency programs will be carried out, in order to determine how to develop more significant policies and investments in energy efficiency. This knowledge work could result in the development of guidelines for governments, investors, and

financiers; these guidelines should benefit various sectors, in particular, energy, urban, transport and industrial development.

Operational Leveraging:

- Integration of policy options and mitigation instruments in macro-economic or sectoral policy dialogues and programs; and
- Development of energy efficiency investment and other energy resource portfolio diversification programs, in particular to the benefits of lowest income groups; and development of investments to facilitate increased energy trade in favor of most vulnerable countries.

Other elements may be added to the Program when the first results of the analytical work become available.

- The planned *outputs* from this Energy Security Thematic Program are;
- One or two flagship publications, which would include diagnostic tools and information on risk mitigation instruments that can be used by policy makers and advisers;
- Validation and dissemination workshops, and possibly some long distance training;
- Short notes for the Knowledge Exchange Series; and
- New energy efficiency regulations and investment opportunities.

The expected *outcomes* would be:

- A significant shift in energy sector policies and strategies in China and other selected countries that integrate vulnerability to external or internal shocks as major variables in achieving the goal of securing sustainable energy services for growth and poverty reduction.
- Improved domestic policies, in several countries, that take into account the needs of the vulnerable groups.

Design and implementation in several countries of mechanisms to mitigate the impact of vulnerability to external and internal shocks, such as improved energy efficiency, increased regional trade and lesser reliance on one main source of primary energy.



Power theft, Dhaka, Bangladesh.

Thematic Program Two: Renewable Energy

ESMAP will seek to support the implementation of the commitments made at the 2004 Bonn Conference on Renewable Energies and Energy Efficiency. In particular,

- The Commitments made by the World Bank to increase its level of lending by 20% a year for the next five years for renewable energy, a goal endorsed by the Bank's Board.
- The Commitments made by many public and private partners to scale up the development of renewable energy resources.

In the 2005-2007 Business Plan, ESMAP will support the operationalization and scaling up of renewable energy sources, as a means to diversify energy resource portfolios, to facilitate access to modern energy services for the poor in remote areas, and to respond to the global transition to a low carbon economy. To help close the access gap, ESMAP's work will address localized distributed energy solutions where other options like grid extension are difficult and costly. Taking into account the energy access activities based on biomass for household heating and cooking needs, ESMAP's renewable energy activities are expected to grow significantly during the coming years, to reach 40% of its portfolio in the present Business Plan.

In this business plan, ESMAP will:

- Develop operational models based on Poverty Reduction Strategies to increase access to modern energy services by the poor and the un-served.

- Advise on the formulation of policies to diversify the primary energy supply portfolios as means to improve energy security.
- Provide upstream advisory services to client countries on the design of renewable energy projects that can be financed by bilaterals, international institutions, or the private sector.
- Assist on the design of incentives for a more effective utilization of renewable energy for development.
- Explore mechanisms to foster the global shift to a low carbon economy.

The main elements of the program will include:

Analytical Work on:

- **Legal and regulatory frameworks and incentive policies** for renewables, adapted to the specificity of developing country needs. Experience from a number of countries with advanced renewable energy development such as Brazil, Denmark, Germany, India, the Netherlands, Spain, and the UK, has demonstrated that a sound legal and regulatory framework to encourage renewable energy development, such as the renewable energy portfolio standard and feed-in law, are critical drivers in developing a large renewable energy industry in these countries. ESMAP will provide advisory services and technical assistance to a number of selected countries to (a) capture and disseminate best practices on legal and regulatory issues to enable grid-connected and off-grid renewable energy solutions; (b) propose implementation solutions and adjust the solutions based on the lessons of experience. These TA activities will capitalize on initial work that ESMAP has been developing in tandem with the Energy and Water department of the World Bank on the legal framework for renewables and decentralized energy services in several countries, and on the emerging regulatory issues.
- **The integration of renewables in energy policies, system planning and energy sector regulation** including the design or dissemination of grid system management tools, which integrate the intermittency of supply from renewables. An ESMAP study reviewed the treatment of the modern energy, renewable energy and efficiency in Poverty Reduction Strategy Papers (PRSPs) and Country Assistance Strategies (CASs), and found that PRSPs and CASs give limited attention to energy in general, and when mentioned, tended to focus on large infrastructure. Energy access, renewables and efficiency are under-represented, leaving important linkages with productivity and quality of life aspects unaddressed. ESMAP will provide systematic technical assistance support to ensure that renewable energy options are integrated into the national action plans, into the resulting investment plans, and into sector reform processes. In addition, ESMAP will provide guidance and training to the staff from various sectoral ministries, World Bank and other donor teams during the preparation of the PRSP/CAS updates on the design of renewable energy programs as part of national energy plans.

- **The development of innovative financing instruments.** This task will seek to design specific solutions to deal with financing issues stemming from the small size of renewable energy projects and their special risk profile. One of the major challenges to scaling up renewable energy is how to meet the financing needs. The investment requirements for renewable energy based on commitments (approximately 70 GW up to 2015) made by a number of developing countries at the International Conference on Renewable Energies in Bonn is estimated to be up to US\$120 billion. Given that ODA funding and countries' fiscal resources are limited, the key to leverage investments from the private sector, including both large international companies and local small and medium enterprises, and domestic financiers. Small renewable energy schemes, under the right conditions have proven attractive to local investors (India, Sri Lanka). Some successful examples of working in partnership with local financial institutions exist and should be documented and mainstreamed. Financial intermediation with project developers is needed to bridge the knowledge and perception gaps. For example, bankers expect that small-scale RE projects be bundled by developers to reduce the high transaction costs.
- ESMAP proposes (i) to engage with a consortium of financiers from multilateral and bilateral organizations, together with domestic and international financial institutions; and (ii) commission a few studies of innovative financing instruments especially designed for renewable energy that engage the private sector and leverage financing from local capital markets through risk-mitigation and credit-enhancement instruments.

Knowledge Tasks: ESMAP plans to expand its role as a knowledge clearing house. ESMAP will

- Facilitate cross-regional exchanges of information and lessons learned;
- Disseminate best practices of renewable energy projects. ESMAP can disseminate and foster the replication of positive experiences from China and Mexico to other countries, based on demand. ESMAP will capture the experience with business models and financing mechanisms from successful country programs, including India, China, Sri Lanka, and Bangladesh; prepare a Practitioner's Operational Guidebook for staff from the World Bank, client countries and other organizations, in order to facilitate the preparation and implementation of new investment projects;
- Review lessons of experience on how the development of renewable energy resources can benefit the poor, in particular poor women; and distill the latest review of best practices and opportunities for biomass energy sources as a renewable resource to provide modern energy services;
- Launch a special short-note series on lessons learned from RE/EE projects, based on the experience and lessons learned from the above activities. ESMAP will also conduct in-country knowledge dissemination activities; and
- Further develop the methodological and Best Practice work on the economic, social and environmental evaluation of hydro power development; this will be done in partnership with Bank's Water Practice and other stakeholders.

Operational Leveraging will be implemented through the provision of:

- **Advisory and training services.** ESMAP will capitalize on the work it supported in China, Vietnam, Mexico, and the Philippines, in order to: (i) advise governments on sector policy and legal and regulatory frameworks, to ensure that measures for creating a level-playing field for renewables are introduced; and (ii) advise clients how to integrate renewable energy in energy-poverty action plans, which themselves support PRSP implementation plans; and (iii) train financial intermediaries, service providers, investors, and NGOs in client countries on the development and financing of renewable energy projects, in cooperation with such sources of financing as the Carbon Fund and the GEF. One of the major lessons learned from ESMAP, GEF and GVEP renewable energy projects is the need for handholding small and medium entrepreneurs (SMEs), particularly for renewable energy projects. In many cases, these local SMEs are the backbone of development of RE. Large private players may be reluctant to jump start a new market and bring the scale of investment to a higher level until the SMEs have tested the market and helped set up market infrastructure. Another lesson learned from past experience is that general training is usually not sufficient. What these SMEs need are handholding technical assistance and advisory services on topics such as how to develop business plan, how to get financing, how to market the energy they will produce, etc. ESMAP will provide these needed capacity building and advisory services to local entrepreneurs and service providers in the renewable energy area. In addition, as most financial institutions are not familiar with RE projects, ESMAP will provide capacity building support to a set of selected financial institutions, particularly domestic financial institutions including micro-finance institutions, on appraisal RE projects; and help create a window for RE lending wherever possible and applicable.
- **Project support.** One obstacle to scale up renewable energy is that many Bank and donor staff and stakeholders in client countries may not be familiar with renewable energy projects. Preparing and implementing renewable energy projects, therefore, involves a higher-than-usual transaction costs. The relatively smaller size of renewable energy projects also adds extra costs. ESMAP, in cooperation with GEF and the CDCF in particular, will contribute to cover this higher-than-usual transaction cost by assisting the World Bank teams in identifying, developing and preparing renewable energy projects, and evaluating the development impact of these investments. ESMAP funding, however, will not be used to substitute for Bank budget and GEF funding.
- **Pilot activities to validate innovative financing instruments.** ESMAP will support a series of pilot activities to test innovative delivery and financing mechanisms that (a) engage both local SMEs and large private players in renewable energy investment to leverage access to technology and management skills; and (b) leverage domestic financing sources, through outreach activities, capacity building, regulatory framework, and financing intermediaries. ESMAP pilot activities on innovative delivery and financing mechanisms in Bolivia, Comoros, Honduras, and Kenya, for example, demonstrated that small amount of funding on pilot activities played a catalytic role in securing support from decision makers in client countries and donor teams to scale up innovative

approaches; these pilot activities also convinced the private sector players to start renewable energy market in developing countries.

The planned *outputs* from the Renewable Energy Thematic Program are:

- One or two flagship publications (on regulatory frameworks for renewables and innovative financing instruments or the Practitioner’s Handbook).
- Several short notes for the Knowledge Exchange Series.
- Other publications resulting from the analytical work and knowledge tasks.
- New sector policy documents for renewables in at least 5-10 countries.
- A cadre of trained staff, financial intermediaries, and private service providers and investors.

The expected *outcomes* are:

- An increase in World Bank and other financiers’ investments in at least 10 new countries, as well as an increase in other stakeholders’ investments and service provision, in line with the commitments declared at the Bonn Conference.
- Increased access to modern energy services by un-served or under-served regions and populations, in particular amongst low income groups, within a few years.
- Reduced vulnerability to shocks in energy markets in several countries as a result of portfolio diversification.
- Improved legal and regulatory frameworks on renewables in several countries.
- The beginning of a shift towards a low carbon economy.

Thematic Program Three: Energy-Poverty

Under the previous business plan much work was completed on how to improve energy access, in particular, on launching the implementation of the Global Village Energy Partnership Box 4). Under the new business plan, the Energy-Poverty Thematic Program will consist of the following elements:

Analytical Work on:

- **Peri-urban issues**, including the costs for the poor of unreliable supplies and conversely the benefits on development outcomes from improved services; identification of best practices in grid and off-grid services in low-income areas; financing mechanisms and institutional models; experience with multi-energy service delivery models and multi-infrastructure delivery models; new technical options, and public-private partnerships between municipalities, utilities, and NGOs or CBOs; issues of fuel supply and fuel substitution in relation to air

quality and environmental health issues; best practices in providing municipal energy services such as street lighting.

- **Subsidies.** Although much has been written on the subject, there is a need to re-establish the economic justification for subsidies to extend service, and distinguish financing issues such as affordability from the ‘public good’ issue to justify the allocation of public funding to the lowest income group.
- **Biomass Energy.** Renewed attention is given to the use of biomass resources both to diversify the energy resource portfolios and to create productive activities in the rural areas. Pressure on charcoal production for example exists for a wide range of applications, from industrial uses in the steel industry of Brazil to household uses in the cities where it remains the main source of cooking fuels, in particular for low income households. A review of energy consumption patterns in 45 cities (about to be published by ESMAP and WRI) reveals that for the poorest income households in the urban areas up to 50% of their energy consumption is from traditional fuels – wood and charcoal. Further to ESMAP’s review of the potential for biomass energy (*Advancing Bioenergy for Sustainable Development, Guidelines for Policymakers and Investors, April 2005*), and the forthcoming study (2005) on the *Potential for Biofuels for Transport in Developing Countries*, ESMAP will undertake specific country-focussed assessments to test the range of potential biomass development as a modern form of energy for industrial heat and electricity production, for household needs, and liquid biomass resources for the productive use of plant oils and production of biofuels (experiences, approaches, socio-economic impact, and lessons learned). The emphasis will be put on the identification of economic and sustainability criteria for project and program design, with the objective of assisting policy makers, investors, and financiers in identifying investment opportunities which are ecologically and financially sustainable.
- **The Impact of Energy on Developing Countries linked with Multisector Survey Work and MDGs.** The international emphasis on the MDGs and their achievement is unsustainable without the availability of energy and infrastructure. In the future, much development assistance will be directed towards the accomplishment of the MDGs. Within the energy sector, there is a beginning to be an awareness that it is necessary to understand the direct and indirect linkages between energy and the MDGs. The main way to achieve this is through the multisector surveys that are supported by international donors and implemented by developing countries. Unfortunately, they do not have very good energy or infrastructure questions in those surveys at the present time. The work to have a wider array of energy questions in the surveys has begun, and this needs to be complimented by encouraging greater participation by development researchers in analyzing the linkages between energy, infrastructure and development.

Knowledge Tasks:

- To **synthesize the foundation work** developed in the last business plan on indoor air pollution (dissemination of the damaging effect of indoor air pollution on human health, and of the opportunities in many sectors to introduce

remediation programs, update and review of best practices on improved stoves, including the linkages with sustainable biomass production), urban air quality, rural electrification best practices, including the allocation of subsidies, productive uses applications of lighting and power services, and gender in energy.

- To **complete the studies** on the impact of reform on the poor; and disseminate the results of the analytical work.
- To **develop with WBI training programs** for various institutions in client countries and audio-visual programs to reach out to more communities and people, in particular women. Finally, it will also continue to disseminate the methodologies for collecting and analyzing energy data in Household and other Multi-sector Surveys, through staff training, publication of guidelines and analytical results.
- To **further the work on defining an energy-poverty index**, this could be used to monitor overall progress with the implementation of energy access programs in developing countries.

Operational Leveraging:

- **For peri-urban areas.** ESMAP will test some alternative business models to provide energy services in peri-urban areas taking into account the needs of both men and women, ranging from the private supply model to the community based model, and including the traditional utility model. Alternative technologies are also under test through pilot projects in Asia (Bangladesh) and in Africa (South Africa) and have now been operational for several years. As similar problems apply to the provision of energy services and to other infrastructure services such as water and sanitation, a joint approach with other partnerships such as WSP and Cities Alliance will be adopted by ESMAP.
- **Review of Distribution of Household Petroleum Fuels** and to formulate recommendations to encourage more activities in Bank lending. The work in the petroleum sector in the Bank has been moving towards addressing issues of distribution, and particularly how the poor have access to petroleum products. However, the progress has been relatively slow. Besides quality of life considerations, there has been an increasing emphasis given to the transition to “cleaner” energy for households due to issues involving indoor air pollution and health. Most of the recent research indicates that with the use of kerosene and LPG for cooking, there is significant reduction air pollution within the home and this in all likelihood leads to an improvement in the health of women and children. Under this activity there would be a review of existing Bank and non-Bank projects to encourage the wider distribution and marketing of petroleum fuels in both rural and urban areas.
- **Operational Support for the Access Scaling-up Initiative.** ESMAP will also undertake a portfolio review of World Bank and selected donor activities to assess the opportunities of scaling up energy services in non-energy projects, e.g. in health, education, water, agriculture and rural development, transport, and

SMEs. The objective will be to develop guidelines for including energy components which will increase the return to these sectoral investments, and to offer sustainable implementation solutions. Too many such investments have failed in the past for lack of appropriate cost recovery, sustained financing, or maintenance after installation. If needed, a toolkit will be developed for task managers and other professionals.

- ESMAP will continue with its commitments on the implementation of the Global Village Energy Partnership (Box 2.1), both in terms of financial or thematic support to the Technical Secretariat, the launch of the GAP Fund to support partner activities, and country-level activities that include the preparation of multi-sector energy-poverty investment plans and pilot projects.
- ESMAP will also support pre-investment activities such as the provision of strategic or policy advice on rural energy development, gender-sensitive demand assessments, training of financial intermediaries or entrepreneurs that would be needed to kick-start the implementation of World Bank or other ESMAP donors' investment programs. These activities should be defined in full complementarity with the activities on decentralized energy options and SME development which are described in the thematic area on market development and governance.

The planned *outputs* from this Energy-Poverty Thematic Program include:

- At least three to four flagship publications (on peri-urban issues, subsidies, gender in energy, and on the progress towards achieving the MDGs);
- Four to five short notes for the new Knowledge Exchange Series;
- Training and audio-visual dissemination programs designed and implemented; and
- Publications on substantial field results from pre-investment activities.

The expected *outcomes* are:

- To have the foundations and tools generated by the program used by central and local governments and municipalities for the formulation of policies for access to energy infrastructure services and financing.
- Improved utility performance in low-income peri-urban areas, and increased affordable and reliable energy services.
- An effective increase in investment financing for accelerating access to modern energy services by the World Bank Group and other public and private sector partners, in particular in Africa, but also in South Asia and in the IDA countries of East Asia.
- An effective increase in services generated by these investments.
- Better information on monitoring indicators and impact results.

Thematic Program Four: Energy Market Efficiency and Governance

The work on energy market development and sector reform has yielded many valuable insights into the reasons why modern energy often is not reaching the poorest households in developing countries. In many cases the reasons for the problems lie in the discrepancy between the business objectives and obligations of the institutions involved in delivering energy services and the economic profile of the poor or their geographical dispersion in areas difficult to access or with a limited natural endowment. As evidenced in the distribution of financial flows, international private investments in the 90's were essentially limited to large energy projects, and overlooked access projects in isolated rural and peri-urban areas, largely because the wave of sector reforms of the '90s by-passed rural and peri-urban energy. Poorer countries and isolated areas are perceived to present higher risks to investors. They are seen as un-attractive business propositions, although the demand for services is increasing rapidly, not only to meet the needs of growing economies and urbanization, but also to catch up with the lag in rural and peri-urban services. Even if FDI is to resume on a larger scale in the future, it is unlikely that investing on a significant scale in the supply of energy services in isolated areas would be one of the priorities of international investors. At the same time, the performance of the utilities, in particular in Africa, requires major improvements, as well as the management of revenues from hydrocarbons, both in resource-rich countries, and in oil and gas importing countries as such imports are a significant source of tax income.

The Energy Market Efficiency and Governance Thematic Program will therefore focus on:

- Building-up an effective public-private partnership both for the engagement of small energy developers and service providers (SMEs), who present a critical potential of management and technical talent as well as resources, in particular in IDA countries; and for public utilities; and
- Improving the capacity of policy makers and regulators, including in revenue management.

The main elements of this Thematic Program will include:

Analytical Work on:

- **Public-private partnership for distributed energy.** Policy work is needed for the regulation for the operation of isolated and non-isolated mini-grid systems (including renewable energy based systems), as well as for the definition and management of pro-poor subsidies. This work will clearly be complementary to what will be undertaken on subsidies under the Energy-Poverty Program, and under the Renewable Energy Program. Assistance will be provided to cover both *regulatory governance* (laws, regulations and processes) and *regulatory substance* (tariff setting approaches, investment or connection requirements and service standards). The result should provide a “baseline” on current regulatory and subsidy practices, and recommendations on how to improve the regulation and, if needed, subsidization of distributed energy systems. The main tasks will comprise:
 - An assessment of the enabling environment and incentive framework in selected countries with a focus on Africa, and taking into account the political economy of the supply of electricity in isolated areas and the role of the communities.

- Mobilization of stakeholders and design of innovative and formulation of specific regulations and incentives, including the design of alternative business models for SMEs, cooperatives and other forms of decentralized businesses.
- Development of financing and support mechanisms for the implementation of projects.
- Operationalization of enabling and incentive framework including its validation through support to the development of pilot projects, followed by scaling-up.
- Capacity building with governments, communities and local business community.

Knowledge Tasks:

- To distill and disseminate to policy makers at various levels of government, best practices on revenue management or on utilities management from other countries; and
- **Follow-up to Power Sector Investors' Roundtable.** ESMAP supported actively follow-up action to the Power Sector Investors' Roundtable it organized with EW DEN in March 2004, through its direct involvement in each of the three Working Groups (Workout of Projects under Stress; Development of Risk Mitigation Instruments; and Rules of Engagement for Private Investors). Each working group brought together representatives of six large private investors, World Bank staff, as well as IFC and MIGA staff who worked together throughout the March to November period. ESMAP developed a number of Case Studies to examine the relationship between sector reforms and the preferred form of private sector engagement, with a view to introduce maximum flexibility in PPP. ESMAP also prepared a multi-regional analysis of all power projects under stress to understand the causes of stress and their consequences on energy projects of various types in each region. The study determined specific patterns of stress, amenable to diversified workout strategies. ESMAP coordinated the preparation of the follow-up meeting of the participants to the Round Table in November 2004, which acknowledged progress made since the March 2004 initial meeting, and the relevance of the work done. The output of the Working Groups was the consensus between WBG and investors to apply the risk mitigation strategies outlines by the group to selected private projects under development, and to develop specific workout instruments and strategies to be implemented with WBG involvement for testing on selected real stress situations. A follow-up project co-financed with PPIAF is under execution, for completion by December 2005.

Operational Leveraging:

- **Program on distributed energy systems with SMEs.** Demonstration projects in five to eight pilot countries will be designed and implemented to test out the full range of regulatory measures and the training of policy makers, regulators, and operators, on the relevant regulatory framework and implementation modalities;

these demonstration projects will also test out new business and financial models. Working within selected countries, ESMAP will facilitate increased engagement with governments, potential local investors and finance institutions in order to (1) define/improve and implement a legal, policy and regulatory framework to stimulate private sector involvement in decentralized energy infrastructure and services delivery; (2) develop and assess the outcome of pilot projects; and (3) move from the implementation of pilot projects to the implementation, in coordination with donors, of a nation-wide program of access to modern energy in isolated areas on a scale sufficient to make a difference at country level. Funds will help facilitate the adjustment of local institutions and design country-specific, *ad-hoc* financing mechanisms aimed at promoting domestic entrepreneurship and investment in infrastructure services. There will be a particular focus on building the capacity of the local private sector to develop and manage infrastructure businesses. . Given the potential synergies in the provision of energy and water and sanitation services, ESMAP and the Water Supply and Sanitation Program (WSP) will coordinate their activities, as well as with the multi-donor Public Private Infrastructure Advisory Facility (PPIAF), Cities Alliance, InfraCo., and the Slum Upgrading Facility (SUF). Joint programs to cover all infrastructure services in selected countries will be developed where appropriate. ESMAP will bring value-added to these programs, by making them benefit from its demonstrated experience in: (a) building-up global and local partnerships that provide results on the ground, (b) leveraging policy reforms into broader fora such as PRSOs; (c) carrying out multi-sectoral activities focused on achieving the MDGs, and (d) leveraging financing for large-scale technical assistance and investment projects.

- **Program on enhancing the performance of utilities**, in particular in Africa. Advice will be provided to find transitional paths until the institutional and economic conditions enable a more active participation of the private sector. This differentiation will influence further market reforms and require the development of new market structure and regulation mechanisms to handle private-public partnerships, possibly implying a change in the governments' function sector planning in the absence of a fully competitive energy market.

The planned *outputs* from this thematic program are:

- One flagship publication on the building-up of effective public-private partnership for decentralized energy, building of national consensus on a business model for the delivery of energy services by SMEs in seven or eight countries;
- Formulation of national policies for access in isolated areas in seven to eight countries, revised local regulation for the provision of energy services by SMEs in seven or eight countries, five to eight completed demonstration projects;
- Dissemination notes on best practice both on how to implement such partnerships; and
- Dissemination notes on how to improve utility performance in the absence of a fully competitive market.

The expected *outcomes* are:

- Strengthened regulatory and operators' capacity in countries with public-private partnership demonstration projects;
- Improved utility performance, hence more people and businesses served or better served; and
- It is also expected that the pilot projects will lead to the expansion of new investment programs for the provision of decentralized energy services.

Activities Outside the Four Thematic Programs

Some activities presently fall outside the four flagship programs either because the way forward is not yet clear, or because they are new ideas which need some further exploration before they can reach maturity for either one of the flagship programs or under a new program. This is the case for gender activities. Until the full stocktaking exercise is completed, it will be difficult to go beyond the on-going projects and more systematically mainstreaming gender in the activities of the main thematic areas. Likewise on Regional Power Trade, until the synthesis of the experience with past projects is completed, the way forward for ESMAP is not clear, beyond the three on-going activities (Central Asia, South Asia and West Africa).

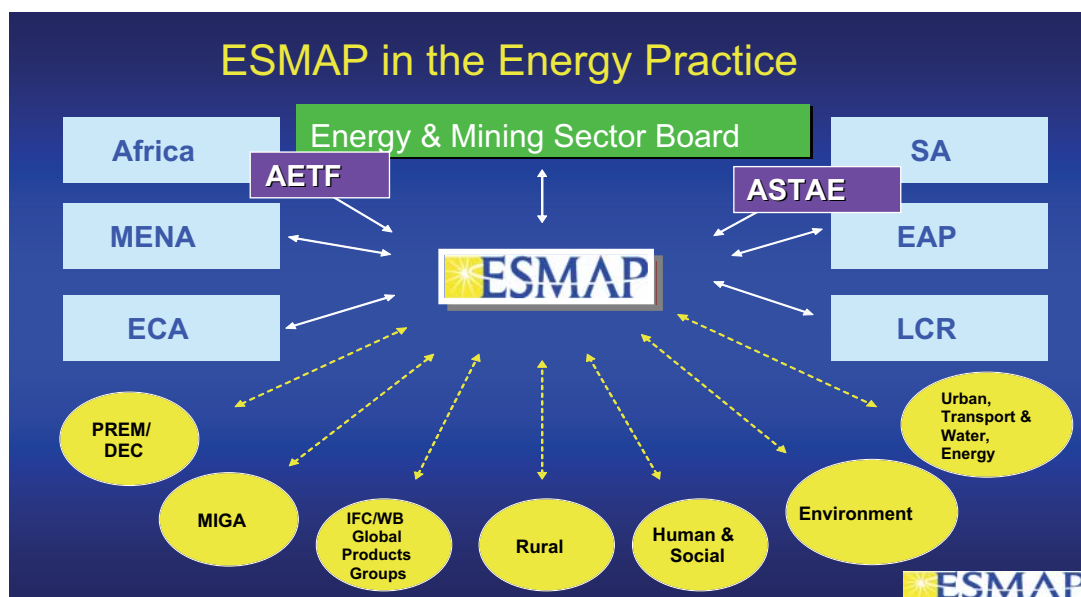
Implementing the Business Plan

This section presents the implementation modalities for the new Business Plan.

In order to fulfill the three functions presented in the Operational Framework—think tank, knowledge clearing house, and operational leveraging,— ESMAP will undertake four main implementation measures:

Since 1998, ESMAP has contracted the bulk of the task management for the projects that it finances to World Bank staff in the regions or in other professional practices (Graph 3.4). It also established a transparent system of call for proposals, in order both to ensure the alignment with operational priorities and to retain the best proposals for the program's strategic areas. This approach, on occasions, became cumbersome, did not generate as many new ideas as expected and did not always ensure alignment with Bank and donors priorities.

Graph 3.4: ESMAP in the Energy Practice



New Portfolio Management Method

For the new Business Plan implementation, ESMAP will put more emphasis on the operational support function, which will be decentralized in order to make it more directly relevant to operational needs, and to reinforce its think tank and knowledge dissemination functions. This implies that it will:

For the Think-tank Function:

Manage directly the bulk of the analytical non-regional think-tank activities, to be implemented by either Bank staff or external experts/organizations (the “best brains” from academia, private sector, bilaterals, NGOs or other organizations). ESMAP will retain task management of these activities mostly with its core staff as part of its own work program. The tasks will be few and focused, each aligned with the thematic program, except in case of an emerging issue. This will ensure a better alignment with donors’ and the Bank’s priorities.

For the Knowledge Clearing House Function:

ESMAP core staff will be responsible for the delivery of a number of specific and monitorable products or tasks with a focus on impact with clients.

For the Operational Leverage Function:

Contract with the Bank’s regional teams a **three-year Regional Program for Policy and Operational Innovation** to implement the key Operations Leveraging activities of the four thematic programs. This approach will permit *better alignment* with regional needs, and facilitate the *scaling up of investments* with preparatory activities consistent with the ESMAP thematic programs. This means that ESMAP will transfer to the Regions the responsibility for implementing on a programmatic basis ESMAP financed regional programs, while maintaining the coordinating, fiduciary and quality control functions and responsibilities in the ESMAP team. ESMAP will organize each year a single call for proposals for each Region to propose their Regional Program with a set of monitorable deliverables. A balance will be required between pre-investment support, and support for innovative policy formulation and dialogue. ESMAP will allocate to the Region an annual lump sum for the implementation of the first year of the program, with a commitment to finance the following years, provided the execution of the overall program meets expectations and its targets are achieved; the funds allocated will be managed by the Region. The execution of each Regional Program will be monitored and evaluated annually for alignment of deliveries with the agreed objectives, and effectiveness. Quality control at the delivery stage of the program will remain the responsibility of ESMAP, which it may contract out its analytical part to a trusted third party. Each Regional Program will include two components:

- **Pre-investment Support** which will cover the formulation of energy policies which would emphasize the social dimension of energy for poverty reduction and the MDGs, renewable energy and environment, and institutional development for the benefit of the poor. This could include assistance for policy formulation for renewable, rural and peri-urban access, energy for the poor; energy planning and options evaluation; establishing policy, legal and regulatory framework; and training developing countries governments, private sector, financiers and NGOs in renewable and poverty oriented energy project development and support.

- **Project Support** will provide project preparation assistance for innovative energy projects including renewable energy development and the supply of affordable energy projects to the poor.

For innovation and exploration of new ideas: In order to respond to requests for just-in-time work and to support the exploration of new ideas, ESMAP will create a (small) fund, for which proposals will be accepted on a rolling basis, and/or from a limited call for proposals.

This approach will significantly reduce the transactions costs for ESMAP of small projects implemented in support to the Regions. It will also reduce the demands on scarce in-house expertise for the management and quality control function of a large number of small projects. In the Regions, this approach will put the Sector Manager in charge of the Regional Program and ensure its full ownership by the Region; in addition, it will help the Sector Manager plan and allocate resources better. ESMAP resources freed by the programmatic approach will be re-deployed to handle ESMAP's core program, which will emphasize crosscutting and global research, innovative cutting-edge topics within ESMAP priorities, and pro-active knowledge dissemination.

Human Resources

In order to successfully implement the business plan, ESMAP plans to:

- Increase its staffing with at least three additional senior specialists with qualifications aligned with the Business Plan priorities, bringing the core group from 5 to 8;
- Strengthen its partnerships with other global programs, in particular WSP, PPIAF, Cities Alliance, GVEP, EU Energy Initiative (EUEI), and GNSD, to draw on their competencies and resources; and
- Form a virtual panel of about ten experts from academia from a wide range of expertise from developing and industrialized countries, from academia, policy making agencies, NGOs, the private sector, to consult and exchange views particularly with the TAG three times a year and produce notes on "scanning the horizon for emerging trends in energy and poverty". In addition, ESMAP will use its contacts under its Knowledge Clearing-House activities to monitor informally the pulse of the energy sector worldwide.

Knowledge Clearing-House

ESMAP will invest in the development of a Knowledge Clearing House in order to meet the needs of its multiple clients, and instead of tagging the knowledge transfer as a by-product of its portfolio activities. It will undertake the following:

Brokering Knowledge: ESMAP will reinforce/extend its cooperation with other global and regional or other energy programs through more regular and systematic knowledge exchanges. ESMAP will aim at taking the lead for its thematic programs to gather, integrate, and disseminate knowledge generated by energy practitioners. It will also engage with academia and WBI to develop training programs with developing countries.

- High level support to Developing Countries Governments: ESMAP will support on request senior officials from country governments on an individual or regional basis, to enable them to access knowledge in an independent environment. For example, it will support the newly established forum of Energy African Ministers. It will also facilitate for several country governments' preparations for CSD 14 and 15 or other international or regional events.
- Knowledge Dissemination: ESMAP knowledge products will include a revised publications strategy, expanding the Knowledge Exchange Series, revamping ESMAP website, and organizing a number of presentations. It will also revisit with PPIAF the possibility of a 'hotline' on energy akin to the rapid response system deployed by PPIAF.
- Publications: A new publications strategy will be implemented to enhance the efficiency and outreach of ESMAP as well as the professional image of the ESMAP reports.
 - Four types of publications will replace the current series of standard and technical reports: Enhanced country or thematic reports, selected from the best country or thematic reports and including literature reviews; Standard reports; and Technical reports; Flagship publications, resulting mostly from the wrap-up of ESMAP cutting-edge analytical work
 - A new product: short "Just in Time" Knowledge Exchange Notes to quickly respond to emerging energy issues or disseminate findings from think-tank analytical work.
 - Dissemination of ESMAP work through articles in journals and periodicals.
 - A new publication procedure: ESMAP will outsource most of publication procedures to the Office of Publisher (EXTOP) or another publisher, including editing, formatting, design, printing, ISBN numbering, dissemination and marketing.
- Knowledge Exchange Series: ESMAP will continue its Knowledge Exchange Series (KES), which provides a stage for ESMAP task managers, as well as outside energy practitioners to exchange knowledge and experiences.
- Create a Virtual energy library and revamp the website to include all past ESMAP publications and work on its website, including:
 - Extending the Virtual library to include publications from partner institutions on the social dimension of energy, renewables and reduction of carbon emissions, and institutional aspects of energy for poverty reduction
 - Producing every year three to five years in-depth Literature Reviews, syntheses and compendiums on selected topics within ESMAP priorities, which may cover programs recently completed by ESMAP or emerging topics in the energy community.
- Organize a Forum on Energy and the Poor every two years for the benefit of all energy practitioners. The role of ESMAP would be to organize the event, while

the content and delivery will be set in cooperation with members of the energy community at large.

Knowledge Dissemination Products:

- About thirty publications per year, including two Flagship publications.
- About 10 Short Notes a year.
- About 10 KES every year.

Monitoring and Evaluating Business Plan Implementation

The retrospective review process that helped guide the formulation of the present business plan provided valuable insights for business strategy and operations. The key need is to standardize and regularize this monitoring and evaluation process so as to be able to obtain feedback in “real time.” M&E activities are required at two levels:

Output Level: The output level focuses on measures of success in business plan implementation. Key performance indicators include:

- Volume and overall quality of ESMAP activities, and coherence with business strategy in terms of thematic and regional distribution.
- The range of actors and partners involved in the design and implementation of ESMAP activities, particularly the balance between national vs. local institutions and international vs. domestic sources of expertise.
- Dissemination outputs such as number and overall quality of ESMAP reports issued, volumes distributed, attendance levels at conference and seminars, web site visits, audiences reached, etc.
- Breadth and strength of ESMAP partnerships, as assessed by the frequency and quality of reporting and substantive individual exchanges, and the volume of resources mobilized for the priority business areas, and volume of resources leveraged by ESMAP activities from non-ESMAP partners.
- Resource planning in terms of managerial efficiency and use of staffing and dollar resources (e.g. level of program overheads) and budget execution (monitoring of budget vs. actual).

Impact Level: The impact level examines the poverty and development outcomes that were attained as a result of ESMAP work. ESMAP faces particular challenges in making direct associations between the outputs of its activities and achievement of specific development outcomes because: (a) the predominantly upstream nature of ESMAP activities implies that there may be significant time lags between activity completion and uptake and application of results, making establishment of causality more difficult, (b) similarly, the innovative nature of ESMAP activities suggests that there may be difficulties or delays in mainstreaming ESMAP-generated approaches, or simply that some new ideas will not prove out as successes worthy of follow-up

replication, and (c) the diversity of partners in ESMAP activities makes direct impact attribution to ESMAP difficult, and in many cases ESMAP's contribution is as a broker and mobilizer of support among many parties.

Key performance indicators include:

- Volume of citations or references to ESMAP outputs in research literature, client country national plans and strategies, and in Bank and bilateral partner project designs.
- Degree to which ESMAP strategies and approaches are adopted by and mainstreamed within other organizations concerned with energy and development.
- Number and significance of ESMAP policy recommendations adopted and implemented by client countries (e.g. new laws and regulations).
- Level of follow-up to ESMAP pre-investment work in terms of volume of new investments catalyzed and breadth of new investment sources (e.g. private sector).
- Capacity built within participating countries and institutions, assessed *inter alia* by their ability to replicate similar future policy and pre-investment work without the need for ESMAP or other external assistance.

Resources are included in this business plan in order to develop an approach to program impact monitoring and evaluation, and to begin applying and implementing the methods in a sustained manner.



Budget and Financing Requirements

Budget and Financing Plan

The total cost of the Business Plan is estimated at US\$40-45 million. It is summarized below on Tables 3.1 and 3.2. In the preparation of the Business Plan, ESMAP intensified its efforts to raise additional financing. As a result, it has received confirmed commitments of about US\$30.8 million, and another US\$9 millions are in negotiations. This is a much better position than at the beginning of the previous business plan. In addition, two donors have confirmed financing for five years (the last two years are not included in the table), and one potential donor, Austria, has indicated already receiving clearance from the Minister of Finance to join as an ESMAP donor (no amount announced yet). Note that with the reconfiguration of the operational framework and the expansion of the program, the overhead costs would increase over their current level.

Table 3.1: Budget Allocation by Thematic Program

Thematic Program	2005	2006	2007	Total Low case	Total Target case
<i>1 Energy Security</i>	500	500	1,000	2,000	2,200
<i>2. Renewable Energy</i>	4,400	5,700	6,400	16,500	17,000
<i>3. Energy-Poverty</i>	3500	3500	3800	10,800	12,000
<i>4 Market Efficiency & Governance</i>	2,000	2,000	2,000	6,000	6,300
<i>Total Business Lines</i>	10,400	11,700	13,200	35,300	37,500
Knowledge	500	600	700	1,800	2,000
Innovation Fund	400	500	500	1,400	2,000
Program Governance & Management	1,000	1,200	1,300	3,500	3,500
TOTAL	12,300	14,000	15,700	42,000	45,000

Table 3.2: Budget Allocation by Operational Function

Operational Framework	2005	2006	2007	Total base case	Total Target case
<i>1 Think Tank</i>	3,500	3,800	4,400	11,700	13,000
<i>2. Operational Leveraging</i>	6,100	7,100	7,700	20,900	22,000
<i>3. Knowledge Clearing House</i>	1,700	1,900	2,300	5,900	6,500
<i>Sub-total</i>	11,300	12,800	14,400	38,500	41,500
Program Governance & Management	1,000	1,200	1,300	3,500	3,500
TOTAL	12,300	14,000	15,700	42,000	45,000



IT Training for kids who live in the surrounding areas of Stutterheim outside East London in the Eastern Cape, South Africa.

ANNEX 1

**BUSINESS PLAN 2005-2007:
Tasks and Outputs by Functions
and Thematic Program, and
Business Plan Outcomes**



ESMAP

ESMAP Business
Plan 2005-2007

Functions Thematic programs	Think tank	Knowledge clearing house	Operational leveraging	Outcomes
1. Energy Security	<p>Tasks</p> <ul style="list-style-type: none"> Map out the macro-economic impact of hydrocarbon price volatility. Deepen the research and methodology through empirical studies for analyzing the impact of energy market instability on various income groups and on various consumer groups, and to analyze mitigation policy options and formulate risk mitigation instruments. <p>Outputs</p> <ul style="list-style-type: none"> 1-2 flagship publications on Diagnostic tools and Risk mitigation instruments 	<p>Tasks</p> <ul style="list-style-type: none"> Consult with a wide range of stakeholders to document best practices and to validate and disseminate the findings of the analytical work. <p>Outputs</p> <ul style="list-style-type: none"> Short notes for the Knowledge Exchange Series Validation and dissemination workshops, and possibly some long distance training 	<p>Tasks</p> <ul style="list-style-type: none"> Integrate policy options and mitigation instruments in macro-economic or sectoral policy dialogues and programs. Develop energy efficiency investment and other energy resource portfolio diversification programs, in particular to the benefits of lowest income groups. Increase investments to facilitate increased energy trade in favor of most vulnerable countries. <p>Outputs</p> <ul style="list-style-type: none"> New Sector Policies documents An increased pipeline of investments in energy efficiency and in energy infrastructure to facilitate trade. 	<ul style="list-style-type: none"> A significant shift in energy sector policies and strategies in China and other countries Improved domestic policies, in several countries, that take into account the needs of the vulnerable groups
2. Renewable Energy	<p>Tasks</p> <ul style="list-style-type: none"> Analyze legal and regulatory frameworks and incentive policies for renewables, adapted to the specificity of developing country needs. Provide systematic technical assistance, guidance, and training to support the integration of renewables in energy policies, system planning and energy sector regulation, including the design or dissemination of grid system management tools. Develop innovative financing instruments to address the risks and issues of small-scale RE projects. <p>Outputs</p> <ul style="list-style-type: none"> 1-2 flagship publications on Regulatory frameworks and Innovative financing instruments 	<p>Tasks</p> <ul style="list-style-type: none"> Facilitate cross-regional exchanges of information and lessons learned. Disseminate best practices of renewable energy projects. Review lessons of experience on how the development of RE resources can benefit the poor and distill the latest review of best practices and opportunities for biomass. Launch a special short-note series on lessons learned from RE/EE projects and conduct in-country knowledge dissemination activities. Further develop the methodological and Best Practice work on the economic, social and environmental evaluation of hydro power development. <p>Outputs</p> <ul style="list-style-type: none"> Practitioners' Guide 2-3 short notes for the Knowledge Exchange Series Other publications from the analytical work and knowledge tasks 	<p>Tasks</p> <ul style="list-style-type: none"> Provide advisory and training services to policy makers, local entrepreneurs, service providers, and financial institutions in the RE area. Provide project support by assisting the World Bank teams in identifying, developing and preparing renewable energy projects, and evaluating the development impact of these investments. Support a series of pilot activities to test innovative delivery and financing mechanisms. <p>Outputs</p> <ul style="list-style-type: none"> New sector policy documents, or PRSP/CAS incorporating RE for 5-10 countries An increased pipeline of RE projects at the Bank (added) A cadre of trained staff, financial intermediaries, and service providers and investors 	<ul style="list-style-type: none"> Increase in the World Bank and other financiers' investment in 10+ countries Increased access to energy services for un-served regions within a few years Reduced vulnerability to shocks in energy market in several countries through portfolio diversification Improved legal and regulatory frameworks on RE in several countries The beginning of a shift towards a low carbon economy

<p>3. Energy Poverty</p>	<p>Tasks</p> <ul style="list-style-type: none"> Analyze peri-urban issues, including best practice on financing mechanisms, institutional models, service delivery models, and technical options. Re-establish the economic justification for subsidies to extend service. Undertake specific country-based applications to establish specific guidelines for the development and use of biomass options. Analyze the impact of Energy on Developing Countries linked with Multisector Survey Work and MDGs. <p>Outputs</p> <ul style="list-style-type: none"> 3-4 flagship publications on peri-urban issues, subsidies, gender in energy, and progress towards achieving MDGs 	<p>Tasks</p> <ul style="list-style-type: none"> Synthesize the foundation work developed in the last business plan on indoor air pollution, urban air quality, rural electrification best practices, and gender in energy. Complete the studies on the impact of reform on the poor; and disseminate the results of the analytical work. Develop with WBI training programs for various institutions in client countries and audio-visual programs to reach out to more communities and people, in particular women. Further the work on defining an energy-poverty index. <p>Outputs</p> <ul style="list-style-type: none"> 4-5 short notes for the Knowledge Exchange Series Training and audio-visual dissemination programs 	<p>Tasks</p> <ul style="list-style-type: none"> Test some alternative business models and technologies to provide energy services in peri-urban areas taking into account the needs of both men and women. Review of Distribution of Household Petroleum Fuels and come up with recommendations to encourage more activities in Bank lending. Provide operational support for the Access Scaling-up Initiative, including undertaking a portfolio review, continuing the implementation of GVEP activities, and support pre-investment activities. <p>Outputs</p> <ul style="list-style-type: none"> Substantial field results from pre-investment activities 	<ul style="list-style-type: none"> Foundations and tools generated by the program used by central and local governments for the formulation of access policies Improved utility performance in low-income peri-urban areas Increase in investment financing by the WBG and other partners and increase in services generated by these investments Better information on monitoring indicators and impact results
<p>4. Energy Market</p>	<p>Tasks</p> <ul style="list-style-type: none"> Provide policy analysis on how to build up the public-private partnership for distributed energy, focusing on regulatory and subsidy issues. <p>Outputs</p> <ul style="list-style-type: none"> 1 flagship publication on public-private partnership for decentralized energy 	<p>Tasks</p> <ul style="list-style-type: none"> Distill and disseminate best practices on revenue management or on utilities management from other countries to policy makers at various levels of government. <p>Outputs</p> <ul style="list-style-type: none"> Short dissemination notes on best practice for PPP and improving utility performance 	<p>Tasks</p> <ul style="list-style-type: none"> Establish and manage a program on distributed energy systems with SMEs. In selected (5-8) countries, pilot, assess, and scale up policy and regulatory framework, business and financial models to stimulate private sector involvement in decentralized energy service delivery. Provide advice on how to enhance the performance of utilities, in particular in Africa. <p>Outputs</p> <ul style="list-style-type: none"> Formulation of national policies for access in isolated areas in 7-8 countries Revised local regulation for the provision of energy services by SMEs in 7-8 countries 5-8 completed demonstration projects 	<ul style="list-style-type: none"> Strengthened regulatory and operators' capacity in countries with PPP More people and business served as a result of improved utility performance Expansion of new investment programs for the provision of decentralized energy services



Urban Air Pollution in China.

ANNEX 2

RESTROSPECTIVE REVIEW: Stocktaking on Implementation of the 2002-2004 Business Plan



ESMAP

ESMAP Business
Plan 2005-2007

The 2002-2004 ESMAP business plan aimed to continue ESMAP's work that had already proved important for the formulation of more effective energy policy in developing countries, to strengthen some parts of the program, and to develop some new areas that might eventually become core areas of research. This section provides a critical assessment of the business plan accomplishments and areas that require further attention.

Major Components of the 2002-2004 Business Plan

The 2002-2004 Business Plan was anchored on the 1998 ESMAP Strategy which identified three strategic directions for ESMAP: increasing access to energy services, providing efficient energy services through the development of energy markets, and ensuring the environmental sustainability of energy services.

However, the concept of "energy access" was extended to "energy poverty," concentrating on the one hand, on the inter-linkages between energy poverty, market development and the environment, and on the other hand, on the application of energy services for consumptive, social, or productive uses, in order to achieve the Millennium Development Goals (MDGs), in particular in education, health, income generation, and environment. Another feature of the 2002-2004 Business Plan was to concentrate the policy and capacity building work on countries, which did not have as yet an "organized energy sector."

The 2002-2004 Business Plan had identified six core business lines under the following three strategic and cross-cutting areas:

- Energy-Poverty: the development of the Global Village Energy Partnership, and analytical work to deepen energy-poverty linkages;
- Market Development: the Impact of Reform on the Poor;
- Energy and Environment: Indoor Air Pollution; and
- Crosscutting Areas: Measurement methodologies and knowledge dissemination.

In addition, work initiated under the first business plan was to continue in the areas of: Energy Service delivery mechanisms for rural energy access, gender and energy, strengthening reform, regional market integration, energy-environment reviews, and the mitigation of social and environmental impacts of energy infrastructure development. The work on rural and renewable energy strategies was to be closely linked to the poverty reduction framework; market reform work was to be focused on the poorest countries; upstream oil and gas development, and rapid energy-environment appraisals for which there was no expressed demand, was to be phased out.

In addition, the program was to contribute to resolving several operational issues, in particular the strengthening of the Africa portfolio, the need to shorten the proposal approval and funding process, and the need to encourage innovation and provide intellectual leadership in certain specific areas. The total cost of the 2002-2004 Business Plan was estimated at US\$40 million, increasing from US\$11.5 million in year 1, to US\$13.1 million in year 2, and US\$15.4 million in year 3. This represented a small increase as compared to the initial budget estimate for the 1999-2001 Business Plan of US\$35.6 million. Actually, the funds raised over the 2002-2004 period were US\$25.8 million, substantially above the US\$17.5 million achievement for the 1999-2001 periods, but still short of the expectations. This issue is further in discussed in Chapter 2.

In order to monitor and evaluate the implementation of the Business Plan, a framework was proposed to, and agreed by the CG which distinguished two levels of monitoring and evaluation activities: the output level, which included such indicators as the volume and overall quality of the portfolio, the range of actors and partners involved in ESMAP activities, the dissemination of products, the volume of resources mobilized, and the managerial efficiency in terms of administrative overheads and budget execution; and the impact level, which included such indicators as the volume of citations and references in the literature, the mainstreaming of ESMAP's strategies and policy recommendations by development partners, the level of investments catalyzed as a result of ESMAP's work, the capacity built in countries for replicating future policy or pre-investment work.

Accomplishments of the 2002-2004 Business Plan: Strengths and Weaknesses

The assessment of the 2002-2004 Business Plan is based on the use of the monitoring and evaluation indicators mentioned above. Most were used and presented systematically during the Business Plan implementation period through the semi-annual reporting system on the portfolio, and other periodic reporting on ESMAP's outputs, financing and budgets. The systematic use of quantitative impact indicators is more difficult in a program like ESMAP because of the wide range of actors and partners involved. Moreover, there are often significant time lags involved between the completion of an ESMAP activity and the anticipated development or policy outcome. ESMAP's management therefore proposed to address this issue by commissioning five specific portfolio and evaluation reviews during the course of the program over the last 3 years on the following portfolios: energy efficiency, rural and renewable energy, regional power trade, sector reform and market development, and gender and energy (see Box 2.2), and reviewed the results of country-level activities in 5 additional thematic areas: indoor air pollution, urban air quality, public-private partnership, revenue management, and reform and the poor. These reviews were complemented by periodic assessments by the Technical Advisory Group (TAG) to the Consultative Group (CG), and/or audit reports.

The results of these evaluations have led to the conclusion that, on balance the 2002-2004 Business Plan was successfully implemented, both in thematic and in process areas. It is also recognized that all objectives were not achieved and that further improvements are needed. The achievements and shortcomings are reviewed below, highlighting: (i) the stronger achievements in the thematic areas of energy-poverty, renewable energy, energy efficiency, indoor air pollution, urban air quality as well as on developing monitoring and evaluation methodologies and innovative approaches, and in leveraging policy and investments in some areas; and (ii) the weaker achievements in concluding the work on the impact of sector reform on the poor, in mainstreaming gender in energy, in scaling-up the analytical work on the peri-urban challenge, in leveraging the policy impact of the oil revenue management, and in achieving more effective knowledge dissemination and capturing new agenda issues.

Areas of Strength

Energy-poverty. Over the years, ESMAP has developed a valuable body of knowledge on energy access issues, both in documenting the energy needs of the poor and coping mechanisms to meet those needs, and in investigating new ways – financing and institutional mechanisms and technologies – to meet their needs. The incremental contribution under the 2002-2004 Business Plan was to initiate some analytical work on regulatory frameworks for off-grid electrification

(starting with Latin America and the Philippines), to carry out best-practice policy work on energy and poverty reduction (Yemen), and to continue developing knowledge products on successful factors and lessons learned from grid electrification

ESMAP also delivered successfully on the development and operationalization of the Global Village Energy Partnership (GVEP), which had been retained at the request of the donors as one of the key elements of the Business Plan, with the goal of catalyzing energy stakeholders to increase their activities on modern energy services for economic growth and poverty reduction, in rural, peri-urban, and urban areas. This emphasis was fully justified in light of both the need to give increased attention to the linkages between energy services and poverty reduction to achieve the MDGs, in particular in Africa, and the political momentum building-up for the World Summit on Sustainable Development (Johannesburg, September 2002). In addition to coordinating the development of the partnership concept, and initially hosting the Technical Secretariat, ESMAP supported the first phase of implementation with regional and country-level activities in Africa, Latin America, and in India, as well as thematic workshops with practitioners. In 2004, ESMAP successfully transferred the Technical Secretariat to a new host organization, the International Technology and Development Group (ITDG), located in the UK. It continues to support the Technical Secretariat, with both financing of the host organization and partnership manager and expert resources in certain areas. As of October 5, 2004, more than 440 organizations have committed to working collectively to increase modern energy access by signing the GVEP's Statement of Principles and participating in country level activities. GVEP is now moving towards the full implementation phase to assist countries implement energy-poverty action plans and innovative pilot activities on energy services delivery. ESMAP is presently engaged in country level activities in 8 countries, 4 in Africa and 4 in Latin American, and is working on the preparation of a regional workshop for East Asia with other partners; these are activities, which will be fully implemented under the new Business Plan (Chapter 2). While the effort required from ESMAP on GVEP was considerable, it also gave ESMAP and the World Bank the opportunity to expand on networking and partnerships, in particular with private sector energy stakeholders and NGOs, on which they can capitalize for the future. Nevertheless, this effort created a strain on ESMAP resources. Certain donors raised concern that it might have diverted from ESMAP's primary functions to undertake analytical and knowledge management work.

Renewable Energy: ESMAP's renewable energy portfolio during 2002-2004 aimed at helping prepare the ground for the incorporation of renewable energy in future projects and in national energy policies, which were still largely focused on traditional forms of energy and rarely take into account the specificity of renewable energy. The work focused on piloting innovative renewable energy schemes, developing renewable energy policies and strategies and examining how renewable energy can be successfully integrated in energy sector planning for increasing energy security. ESMAP activities supported potential renewable energy projects by demonstrating the feasibility of innovative delivery mechanisms for setting up low-cost renewable energy systems to provide affordable electricity for example: (i) remote Internet and phone access via solar PV-powered packet radio transmissions in Honduras; and (ii) productive applications (ice-making from micro-hydro in the Philippines). At the policy level, ESMAP's work ranged from technical assistance to Cambodia, Mexico and Nicaragua in developing specific policies and strategies for renewable energy, which laid the foundations for large-scale World Bank/GEF projects in these countries, to supporting regulatory and market development for pico-hydro in Ecuador. ESMAP also supported methodological work on energy portfolio management in Mexico, to include renewable energy as an economically viable option in the national energy mix in order to increase energy security. ESMAP policy work also led to specific large-scale investments programs in India and China subsequently implemented with World Bank and GEF financing. Altogether, ESMAP's work has produced valuable insights into the potential

of renewable energy for increasing access and reducing energy insecurity, and laid the foundation for scaling-up and operationalization of the commitment to invest in renewable energy expressed by the Bank and other stakeholders at the Bonn Conference of June 2004. The work in support of the development of an enabling environment for scaling-up of renewable energy in national energy mixes and for knowledge dissemination will be pursued and amplified in the new Business Plan (Chapter 3). The next stage for ESMAP is to provide support to countries, to establish a business environment suitable for scaling-up renewable energy, test alternative business models for developing renewable energy under PSP, involving local entrepreneurs and communities to mobilize financing.

Energy Efficiency: ESMAP's energy efficiency portfolio during 2002-2004 focused on establishing a direct and clear links between energy, environment, water, and poverty reduction. The energy conservation activities in water utilities in Brazil, Central Asia and China have been followed up by private investments. ESMAP training of financing intermediaries in the financing of energy efficiency activities in Brazil, India, and China, has enabled several banks to start their own portfolios; this work has been carried out in partnership with UNF, UNEP, and RISOE. ESMAP also assisted low-income countries, small cities and towns in Eastern Europe and China in developing heating strategies and pricing policies, which have led to Bank/GEF financed projects. A concern, however, is that this work on energy efficiency has not yet led to a major scaling-up of investments, including by the World Bank.

ESMAP is proposing to undertake a major stocktaking exercise on how to leverage the existing knowledge into investment portfolio development (Chapter 3).

Indoor Air Pollution: WHO has now recognized Indoor Air Pollution as a major public health issue in many developing countries, causing the premature death and high rate of morbidity in particular among women and children in poor households, half a million children in India alone. Through its portfolio of activities on energy-related indoor air pollution (IAP) developed over the last three years in five countries China, Guatemala, India, Mongolia, and Nicaragua. ESMAP has established itself amongst the leaders in this field in: 1) health impact assessments of indoor air pollution; 2) evaluation of the barriers to the development of improved stove programs, and promotion of innovative designs and best practice and wide knowledge dissemination of improved stoves; and 3) examination of policies and measures to enable the development of liquid and gas fuel alternative such as LPG, kerosene, and natural gas to traditional biomass use. ESMAP has played an important role in enhancing awareness among key local stakeholders, and influencing health professionals in the Bank and client countries, in particular in Asia and Latin America. In India, for example, the Government is undertaking with World Bank and GEF support a project called "Creating Village Energy Security through Biomass" which aims at meeting rural energy needs for productive uses, lighting and cooking through biomass-based technologies using local resources in a manner that creates new income opportunities for the rural population. It has been less successful in Africa, although it did carry out an excellent literature review and issues paper. These activities have provided foundation knowledge, which will be further disseminated under the 2005-2007 Business Plan (Chapter 3), and will lead to new investment activities in several countries.

Urban Air Quality. In providing support to what has since become the Clean Air Initiative and contributing to the analytical work of the World Bank's Air Quality Thematic Group, ESMAP has contributed to generating a strong body of analytical work on the impact of urban air pollution on the urban poor, on the correlation between emissions by various fuel-based transport systems and human health, as well as on possible remediation measures. For example, the work on the environmental health damage from baby-taxis in Bangladesh led to new regulations for the

lubricant market and the elimination of two-stroke engine vehicles, as well as to new investments in Thailand and India in clean-fuel urban transport. The work on inter-fuel substitution (Pakistan and Nigeria) has also led to changes in the policies on LPG, generating social benefits stemming from the availability of clean cooking fuels on the domestic markets: in Nigeria, for example, domestic LPG prices have declined by 40%. The dissemination of this analytical work to policy makers and other stakeholders will continue under the new Business Plan (Chapter 3).

Monitoring and Evaluation

Methodologies: ESMAP has been very active in this area. The methodology developed with the country-case of the Philippines to measure the impact of electrification on education, health, and income generation of poor households is now being adopted as a standard methodology in an increasing number of projects (Cambodia, Laos, Bangladesh, Senegal). ESMAP has also contributed to the development and testing of Energy Modules in household surveys which are used in poverty assessment and self-standing Living Standards Measurement Surveys (LSMS). This work will be further disseminated through staff training programs in the Bank and client countries (Chapter 3), as well as through cooperating with GVEP partners on the monitoring of the partnership outcomes.

Box A1.1: Improving Integration of Energy in the Burkina Faso PRSP – 2000-2006

The starting point: The first version of the Burkina Faso PRSP (2000) had very little reference to energy: It contained a factual paragraph called “living environment” describing the rate of access to electricity, a mention to electricity in the “reduction of factor costs” paragraph and a brief description of the importance of a potential rural electrification program to be developed in the following years. Other sources of energy were barely mentioned. This was not found satisfactory by the energy community, which tried to improve energy references in the Progress Report issued in 2002, but met with little success beyond the description of the “reforms of the sector.” A key reason was the difficulty in relating to the broader issues treated in the PRSP.

Changing approach: In February 2003, a delegation of 10 people, led by the Minister of Energy, participated in the multi-sector regional workshop on Energy and Poverty Reduction. The workshop was led by ESMAP under the umbrella of GVEP. The 3-day workshop provided the Ministry of Energy with the opportunity of understanding the design of the PRSP from the standpoint of other sectors. The Burkina team collectively wrote an initial draft Energy Action Plan that outlined how energy could contribute to the achievement of other sector’s goals within the PRSP. The Ministry of Energy later enriched this document and, with the support of several donors, used it as a tool to engage the Ministries in charge of the PRSP revision process through late 2003.

Results: The 2004 PRSP now includes significant references to energy, including the linkages between energy services as “means to promote growth in remote rural areas,” to improve “access to water,” “agriculture development” and “gender promotion;” wood fuels are included, and an entire page is devoted to “rural electrification.” More importantly, it now includes an allocation of Heavily Indebted Poor Countries (HIPC) funds and a new energy-related indicator in the monitoring indicators. The HIPC allocation is modest (2%), but this is in line with the expected 2.5% contribution of the energy sector to the GDP growth and the “rate of electrification” indicator.

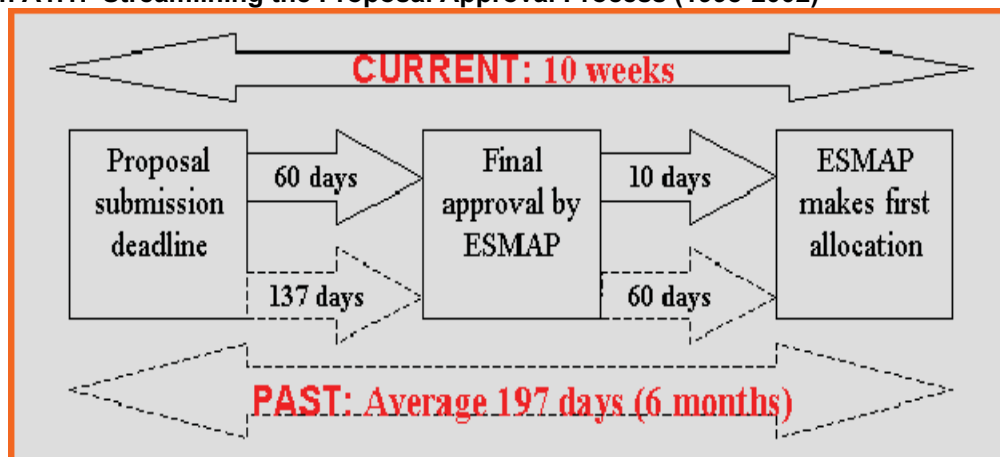
Additional work needed: The Ministry of Energy is now focusing on the Implementation Program of the PRSP for 2004 to 2006, including its direct contributions to other sectors. For example, it has committed to electrify a specific number of school and health centers over the next 3 years to support the education and health sectors.

Innovation in Multi-Sector Approaches. Taking on the operational challenge of building up the linkages and the MDGs, ESMAP drew on various sources to develop new operational concepts

for multi-sector approaches in energy services development. In particular, it benefited from the above-mentioned methodological and analytical work done in the Philippines, from the lessons from such projects as the Uganda-Electrification for Rural Transformation, and from the experience with the implementation of the Comprehensive Development Framework and PRSP of Burkina Faso. ESMAP designed multi-sector/multi-stakeholder workshops, which offered participants the opportunity to design their own country programs that integrate energy services as an input to achieve the objectives in health, education, water, agriculture and SME development. These workshops laid the foundations for integrating energy in the revisions of the Poverty Reduction Strategies (Box 2.1) and for the country-level activities, which are now being pursued under the GVEP program. Deepening the implementation of the multi-sector approach, ESMAP's support led to the development of new terms for rural electrification concessions in Senegal, which target the applications of the services to specific social or productive applications. Other examples of ESMAP's innovative multi-sector work include pilot activities in Honduras to demonstrate innovative institutional and financing delivery mechanisms for setting up a low-cost model to model to obtain remote internet and phone access via solar PV-powered packet radio transmissions; and a project carried out with the private sector in Morocco intended to increase energy and water efficiency in the industrial park, and finance improvements in housing and social infrastructure from the savings in energy and water expenditures through an Environment and Social Fund. Dissemination of this work had started through publications and presentations in various fora and will continue (Chapter 3).

Streamlining the ESMAP Process. Analyzing the results of a review of the 57 proposals approved between 1998 and 2002 (Graph A1.1) showed that on average six months used to elapse between submission of a proposal, approval, and the first allocation of funds. The process was revised in 2003 and the time elapsed reduced to 10 weeks. This was made possible with the following measures: closer follow-up of every proposal, strict adherence to announced processing schedule, and more systematic interface with donors earlier in the process. In addition, ESMAP introduced a Fast-Track Window in response to just-in-time requests for projects under US\$50,000, for which the request is limited to a two-page concept note, and ad hoc reviews are immediately set up. The Fast Track Window proved effective in accelerating the delay between proposal submission and approval, which was reduced to about fifteen days; however, disbursements for some of these projects proved to be slower than expected after approval, as their implementation was dependent upon the preparation cycle of the associated project, which slipped in certain cases with a parallel impact on the implementation of the Fast Track ESMAP project.

Graph A1.1: Streamlining the Proposal Approval Process (1998-2002)



Leveraging Policy Change and Investments. Although a complete quantitative assessment is not available, ESMAP management is seeing an increase in follow-up activities in client countries—key changes in government policies, in the development of new investments and adoption of new technologies, and in the increase in donors’ financing. Examples of such impact from the indoor air pollution, urban air quality, energy efficiency, and private sector provision of energy services activities have been cited in the previous paragraphs. Additional examples include the impact of ESMAP’s work on renewables in India (TAG’s review) which attributed to ESMAP’s policy work the trigger for the Government’s policy change towards renewables, with the result that today more than 10,000MW equivalent based on renewables are now in the energy system. The energy-poverty workshops mentioned above have triggered the integration of energy in PRSP updates and the integration of new projects or project components in several countries (Brazil, Honduras, Cameroon, Burkina, Madagascar, Mauritania, Senegal, Zambia, Mexico). This increased evidence of ESMAP’s leverage suggests both increased alignment between ESMAP activities and World Bank’s and other donors’ activities, and the value of ESMAP to undertake activities that support the implementation of new investments. This is an important lesson that helps define the operational leveraging function of ESMAP for the new business plan (Chapter 3).

Weaker Areas

Impact of Sector Reform on the Poor. This is a theme for which ESMAP management both commissioned work and responded to country requests. The portfolio of activities is promising, but only two activities, Yemen and Central America, are completed. This work has elicited a lot of interest from other countries (e.g. Ghana, Lesotho, Malawi, Nigeria, Djibouti, Pakistan, and more recently, Mauritania) but the results in these countries are not yet available. The other activities on the impact of sector reform on the poor has not moved at the speed expected—largely because they are complex multi-country studies being implemented with a large number of decentralized local research organizations— so that the results from both the methodological design and the country applications are not yet fully available. The results are now expected in 2005 for further dissemination (Chapter 3).

Delivering Services for the peri-urban poor. Past ESMAP work on peri-urban issues—besides the urban air quality work – focused essentially on issues related to the supply of domestic fuels and their impact on biomass resources (India) and environmental health (Mauritania), and to the introduction of innovative solutions to improve basic housing, energy, water and sanitation services (Brazil, Kenya, Tunisia, Morocco). The issue of the peri-urban areas was retained as a “development business line” with the objective of initiating work more aggressively. The value-added of the activities initiated over the past three years (Brazil, Nigeria) is to start recognizing the pressure emanating from the trends in accelerating urbanization and from the impoverishment of cities on the provision of basic energy and other infrastructure services. This is clearly insufficient, and the issue being increasingly recognized by policy makers, municipal managers, and donors. ESMAP has retained this concern as a key theme for further work (Chapter 3).

Gender in Energy. Quality work has been done, but mainstreaming the results is insufficient. The Gender in Mining International Workshop in Papua and New Guinea was ground-breaking territory which led to other national workshops in Eastern Europe, and more importantly, it

provided participating women with ideas and tools to raise funding for economic reconversion activities. The Bangladesh project —Women and Renewable Energy— has had a significant impact, both on the policy and program design for renewables in Bangladesh, but also in launching the local manufacturing of components for solar home systems. Other gender-in-energy activities have included workshops, studies and pilot projects in rural electrification and other energy services. Although ESMAP has worked both with the World Bank’s Gender Group and the operational staff on these activities, the impact on Bank and other stakeholder activities is still limited. There is not yet enough recognition that 70% of the poor are women, and access to energy services has a gender dimension that brings considerable benefits to women in health, education and productive activities. For example, modern cooking fuels free women from the burden of collecting and carrying large loads of wood fuel and from exposure to debilitating fumes from primitive stoves. In addition, access to modern energy enables women to develop their own income activities. More resources need to be mobilized, and more dissemination efforts need to be undertaken, to achieve results that ensure electrification and energy services programs more generally meet the needs of women and men. ESMAP is presently working on a joint publication with Energia and NREL which will review the issues and provide best practice examples; a stock-taking workshop is also envisaged in order to define ESMAP’s options on how to best address this issue (Chapter 3).

Expansion of Africa Portfolio. Although the number of projects increased by about 10 projects as compared to end 2001, the proportion of the Africa portfolio in the whole ESMAP project portfolio both in number and in value has not increased noticeably. For the previous business plan, ESMAP had identified the lower success rate of proposals (28% vs. 42% portfolio average, submissions to approvals) as a possible contributing factor. This was no longer the case under this Business Plan (68% vs. 49% portfolio average), and Africa received more of ESMAP’s staff dedicated support than any other region. This disappointing increase in ESMAP portfolio in the Africa region was due to several factors, including the lack of available Task Managers in the region as it was devoting all its resources to World Bank portfolio supervision, and scaling up its energy operations, the availability of regional trust funds for support to project preparation, and the slow emergence of access as a regional priority over the period under consideration. ESMAP’s management therefore counts on the better alignment between the priorities of the Africa region —access, sector management and regional energy market integration— and ESMAP’s priorities, and on the new operational procedures proposed for the new Business Plan (see Section III) to remedy to this situation.

Knowledge Dissemination. Knowledge products are ESMAP’s major outputs. ESMAP issues about 30 publications a year, including its own publications, CD-ROMs, and publications with partner organizations. However, concerns were raised that ESMAP was not dedicating sufficient resources to digest and disseminate knowledge effectively and efficiently. The website has been improved, and the number of hits significantly jumped when it was reopened to about 44,000 hits a month, but has leveled off again around 16,000 in 2004; possible explanations include that the search engine is not yet agile enough, and not enough visibility is given to the site. ESMAP publication process is still slow, and short notes are needed to digest the comprehensive studies and disseminate their conclusions to a broader public. Although there are lots of quality ESMAP publications, too few have been given the dissemination, visibility and wide recognition they deserve. The course on Urban Air Quality developed with WBI and delivered already in three

languages to an audience of about 4,000 persons is an example of successful knowledge dissemination. It is the prototype of dissemination activities that ESMAP plans to develop under the new business plan. In the new business plan, innovative methods and partnerships for knowledge dissemination will be developed (Chapter 3).

Capturing New Agenda Issues. ESMAP is continually challenged to provide leadership in capturing new agenda issues, and scanning the horizon for commissioning just-in-time analytical work. In some areas —power sector reform, electricity pricing, rural and renewable energy strategies, revenue management, regional power trade— ESMAP’s valuable past contributions are recognized. These activities have directly addressed energy poverty issues, generated in-country momentum, played a catalytic role in policy changes, generated and disseminated knowledge, and leveraged Bank operations. However, as the ESMAP business model was based essentially on implementing its business plan through the Regions, it had limited opportunities to engage in own work-program activities. This limitation will be eased through the implementation of the new operational framework presented in Chapter 3. The process for understanding the market for ESMAP’s work has also been questioned, and concerns were raised by the TAG. A systematic effort has been made to review the issues which are brought out in the main international conferences and in the Bank Energy Week and energy publications, and to draw from focused discussions with country clients, donors, TAG, the private sector, NGOs, the members of the Energy and Mining Sector Board, and the many staff from the energy and other practices with whom ESMAP interacts. The result from this process has enabled ESMAP to select the main thematic areas for the past and forthcoming business plans, as well as providing inputs for future orientations of the World Bank’s energy work (e.g. regulation of decentralized energy services and distributed energy, energy security). Nevertheless, in order to address these concerns and become more agile and forward looking, ESMAP is proposing a new mechanism for “scanning the horizon,” which is described in Chapter 3.

Conclusion

To conclude, the 2002-2004 Business Plan can be seen as a productive continuation of the program development, both on content and on business processes. Yet, several of the shortcomings noted at the onset of the Business Plan were not corrected. The level of effort on knowledge dissemination, for example, has remained insufficient. Other lessons from the review of the 2002-2004 Business Plan include:

- The three year time frame of the business plan, to bring in new activities and phase out others, has its shortcomings: at least five years of intensive work are needed to develop a solid body of work, then disseminate it effectively. ESMAP’s substantial achievements with Measuring Energy-Poverty linkages, Lead Elimination, Indoor Air Pollution, Regional Power Market Integration, Rural Electrification and Renewable Energy Strategies, have been possible only because of continued work in these areas for five years or more.
- The empirical and analytical work on a theme must be carried out across a sufficiently large number of countries or circumstances to validate results, identify factors of success or failure, and criteria for replicability.

- Given the relatively small size of the program, selectivity and concentration on fewer themes is preferred.
- Deepening the analytical and operational leveraging at the country level provides for higher probability of sustainable solutions.

Having recognized both, the strengths and the weaknesses of the program, significant adjustments to the program, in particular a new operational framework has been designed for the new business plan. These issues are addressed in greater detail in Chapter 3.



Solar Panels and telephones in Qunu in the Eastern Cape, South Africa.

APPENDIX

LIST OF KNOWLEDGE DISSEMINATION ACTIVITIES AND PUBLICATIONS: 2002- 2004



ESMAP

International Workshops, Conferences, and Presentations

1. Turkey: A number of reports produced under the Turkey Energy Environment Review (Phase III) project were discussed at a major stakeholders' workshop in Istanbul (June 2002).
2. Azerbaijan: The Azerbaijan–Natural Gas Sector Restructuring and Regulatory Reform project presented NERA's inception report at a stakeholder workshop in Baku (March 2002).
3. Cambodia: First national stakeholder workshop was held under the Cambodia Renewable Energy Action Plan project in Phnom Penh (January 2002).
4. Cambodia: Final national stakeholder workshop was held under the Cambodia Renewable Energy Action Plan project in Phnom Penh (November 2002).
5. India: A major regional workshop was held under the India Indoor Air Pollution activities in Delhi (May 2002).
6. India: Three-country workshop was held in Delhi under the Financial Intermediation Mechanisms for Energy Efficiency Projects in Brazil, China and India activity (May 2002).
7. Ethiopia: Regional Energy and Poverty Reduction Workshop was held by ESMAP and the World Bank's Africa Energy team in Addis Ababa (October 2002).
8. South Africa: The Global Village Energy Partnership was launched at a well-attended side event at the World Summit on Sustainable Development in Johannesburg (August 2002).
9. Côte d'Ivoire: ESMAP and the World Bank's Africa Energy team co-financed a workshop on rural electrification for poverty reduction in Abidjan (March 2002).
10. Brazil: A document about the National Rural Energy Strategy was discussed at a Stakeholders' Consultation Workshop under the Brazil Rural Electrification Strategy project (June 2002).
11. Brazil: Stakeholder roundtable about financing options for energy efficiency projects was held in Rio de Janeiro, under the Brazil Energy Efficiency Monitoring & Evaluation for Water Utilities project (September 2002).
12. Bolivia: Third of four stakeholder workshops held in Trinidad, Bolivia, under the Training Program for Key Group Representatives of Indigenous Peoples (September 2002).
13. Ecuador: The Ecuador–Indigenous People's Training Program on Oil Development activity held a consensus-building training course for the representatives of indigenous peoples (February 2002).
14. ESMAP sponsored session on Solid Fuel Use in Developing Countries (with 12 sponsored developing-country participants) was held at Indoor Air Pollution 2002 Conference, Monterrey, California (July 2002).
15. An international stakeholder workshop on Petroleum Revenue Management was held in Washington, DC, under the Governance and Revenue Management project (October 2002).
16. Belgium: EU/ESMAP workshop on power sector for EU accession candidates was held in Brussels (March 2002).
17. Belgium: EU/ESMAP workshop on power sector for EU accession candidates was held in Brussels (November 2002).
18. Energy-Poverty Nexus in Africa (GVEP). Dakar, Senegal, February 4-6, 2003
19. Activity Dissemination Workshop: Health Impacts of Traditional Fuel Use in Rural Households in Guatemala. Held in Guatemala from April 1-2, 2003
20. GVEP Technical Secretariat and Kreditanstalt fur Wiederaufbau sponsored a Workshop in Berlin for input on the GVEP financing facilitation line. April 2003.
21. 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. Columbus, Sri Lanka. June 2003.
22. 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. July 2003.
23. Workshop Focused on Energy-Poverty Nexus in Africa (GVEP). Douala, Cameroon. July 16-18, 2003.
24. At the Second World Forum on Energy Regulation, 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. Rome, Italy, October 2003.
25. Workshop Focused on Energy-Poverty Nexus in Africa (GVEP). Addis Ababa, Ethiopia. October 23-25, 2003.
26. 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.

27. ESMAP presented “ <i>Energy, Gender and the MDGs</i> ” at the International Workshop on Gender Equality and the MDGs, Washington DC, November, 2003
28. Nicaragua Policy and Strategy for the Promotion of Renewable Energy Resources Project held in Managua, Nicaragua, February 2004 and in December 2004.
29. Presentation at the request of the Infrastructure Vice Presidency for the Development of the Administrative Client Support Staff (ACS). Presented by John Strongman on the ESMAP Activity: Women in Energy and Mining Voices for Change: A Vision for a Better Future. March 17, 2004.
30. Columbia University: <i>The Energy Challenge for Poverty Reduction and Economic Growth</i> . March 23, 2004
31. Brown University: <i>The Energy Challenge for Poverty Reduction and Economic Growth</i> . March 31, 2004
32. World Bank Priorities: The Energy-Environment Perspective. April 22, 2004.
33. Lead Elimination: ESMAP’s Global Experience. Nairobi, May 6, 2004.
34. Princeton University: Indoor Air Pollution Workshop. May 25, 2004.
35. Business Forum on Renewables Presentation on: The Markets for Renewable Energies and the World Bank Group" June 2, 2004. Germany, 2004.
36. International Conference for Renewable Energies, Bonn, Germany, June 1-4, 2004.
37. Africa Energy Forum in Amsterdam. June 21, 2004.
38. North American meeting of the International Association for Energy Economics (IAEE). Session entitled "The Global Energy, Environment and Investment Outlook" July 8, 2004.
39. ESMAP presented “ <i>Domestic Energy and Women’s Lives: The Case of India,</i> ” at the Society for International Development, Washington, DC, July 2004.
40. World Renewable Energy Conference (WREC). Denver, August 2004.
41. Stanford University: Rural Electrification Workshop. August 2004.
42. Mexico’s Innovative Financing Mechanism for Energy Efficiency in Mexico. Presentation delivered to PowerMex in Mexico City, Mexico, September 2004.
43. ESMAP presented “ <i>Benefits of Rural Electrification for Development: Implications for the MDGs</i> ” at Columbia University, September 2004.
44. Presentation to Canadian Regional Government entities and private sector enterprises of the Bank's energy strategy, and of ESMAP: its goals, products, and portfolio of activities. November 14, 2004.
45. ESMAP presented “Rural Electrification Public Policies and Programs: Do They Matter” at the Conference <i>Electricity and the Human Prospect</i> , Stanford University, December 8-9, 2004.
46. ESMAP co-sponsored the Clean Air Initiative (CAI) Asia: Better Air Quality 2004 Annual Conference for CAI-Asia in Agra, India, December 4-9, 2004.
47. ESMAP Presentation: “ <i>Policies for Improving Rural and Peri-Urban Access to Modern Energy Services.</i> ” Energy for Development 2004 Conference in Noordwijk, The Netherlands, December 13, 2004.
<i>Knowledge Exchange Series, Roundtables, and Booths</i>
1. Indoor Air Pollution Roundtable Discussion. March 19, 2003.
2. ESMAP/Energy Market Development Thematic Group/ASTAE: PEPCO Development and Management of Green Electricity Offerings, March 27, 2003.
3. Infrastructure Forum: "Connecting People to Resources and Opportunities." May 2-5, 2003.
4. Delivered to the Administrative Client Support Staff (ACS) of the Infrastructure Vice Presidency under the INFVP Breakfast Series: "The Global Village Energy Partnership GVEP." June 11, 2003.
5. ESMAP/European Commission/PPMI/PPIAF Roundtable: Financing and Reform needs in the Water and Power Sector in Lebanon for the Middle East and North Africa. June 11, 2003.
6. Reducing Energy Costs in Water Utilities. June 12, 2003.
7. Power Sector Reform and the Poor in Central America. July 2003.
8. Global Programs were showcased at the request of the Infrastructure Vice Presidency in response to HD week. September 9, 2003
9. Roundtable on Lessons Learned on Hydro Power Investment. September 10, 2003.
10. ESMAP/COCP: Small-Scale Rural Gas Projects in Bolivia. September 23, 2003.
11. Landfill Gas Capture in Sub-Saharan Africa: Opportunity and Feasibility Report. November 4, 2003.
12. At the request of the Infrastructure Vice Presidency during Human Development Week. November 10, 2003.
13. Rapid Assessment (RA) of Environmental Policies in the Power Sector. Karnataka and Rajasthan. November 17, 2003.

14. ESMAP/COCPO: Energy, Environment, and Population Program. November 21, 2003.
15. Invited by the Infrastructure Vice Presidency for the Development Market Place. December 3-4, 2003.
16. The Dams Planning and Management Action Plan. A Tool-Kit for Bank Operations. January 20, 2004.
17. ESMAP/IIIE/SID Presentation: Domestic Energy and Women's Lives: The Case of India. January 21, 2004.
18. Regional Electricity Market Integration. January 22, 2004.
19. ESMAP/Energy and Mining Sector Board: ESMAP Activity: Energy and Mining Sector Board Lecture Series on some of the Rural Electrification work carried out by ESMAP. February 11, 2004.
20. Renewable Energy Policies and Action Plans. February 26, 2004.
21. ESMAP/GPOBA BBL: Joint ESMAP-GPOBA-Energy&Poverty Thematic Group BBL: Promoting Private Investment in Rural Electrification in the Philippines. March 1, 2004.
22. ESMAP (World Bank Group) Participation in the International Conference for Renewable Energies, Bonn, Germany, June 1-4, 2004.
23. Invited by the 5th Annual Staff Exchange and Knowledge Sharing Program Conference and Expo on June 28-29, 2003.
24. ESMAP/ESSD East Asia Pacific Region: Air Pollution in China: Sulfur and Particulate Pollution Sources and Control Measures. July 22, 2004.
25. Lessons Learned from the ESMAP Renewable Energy Portfolio. September 29, 2004.
26. Innovative Financial Intermediation in Poland. November 11, 2004.
27. ESMAP/Urban Transport Thematic Group: Eliminating Emissions from Two-Stroke Engine Baby-Taxis in Dhaka. November 16, 2004.
28. The Uses of Pico-Hydro Technologies in Rural Development Programs. November 22, 2004.
29. Scaling up Energy Efficiency Financing in Brazil, China and India. Held on December 16 at 10:00a.m in Room H7-290.
30. ESMAP/Energy and Water Department: Energy for Development 2004 Conference in Noordwijk, The Netherlands, December 12-14, 2004.

PUBLICATIONS		
2002		
East Asia Pacific (EAP)	1. Cambodia: Efficiency Improvement for Commercialization of the Power Sector.	031/02
	2. Mongolia: Improved Space Heating Stoves for Ulaanbaatar.	254/02
	3. Philippines. Rural Electrification and Development in the Philippines: Measuring the Social and Economic Benefits.	255/02
	4. Vietnam: An Overnight Success: Vietnam's Switch to Unleaded Gasoline.	257/02
	5. Vietnam: The Electricity Law for Vietnam: Status and Policy Issues. The Socialist Republic of Vietnam.	259/02
	6. Vietnam: Renewable Energy Action Plan.	021/02
South Asia (SAR)	1. Bangladesh: Reducing Emissions from Baby-Taxis in Dhaka.	253/02
	2. India: Energy Strategies for Rural India: Evidence from Six States.	258/02
	3. India: Household Energy, Indoor Air Pollution, and Health.	261/02
Europe and Central Asia (ECA)	1. Bulgaria: Energy Environment Review	260/02
Global (GLB)	1. Economic Development, Climate Change, and Energy Security.	N/A
	2. Annual Report 2000-01.	N/A
	3. Energy and Development Report 2001: Energy and the Environment.	N/A
	4. Status of ESMAP Portfolio of Projects as of June 30, 2002.	N/A
	5. Economic Development, Climate Change, and Energy Security: The World Bank's Strategic Perspective. Paper No. 3.	N/A
	6. Private Financing for Community Infrastructure.	256/02
Sub Saharan Africa (SSA)	1. Phase-Out of Leaded Gasoline in Sub-Saharan Africa.	028/02
	2. Regional Conference on the Phase-Out of Leaded Gasoline in Sub-Saharan Africa held in Senegal.	029/02
	3. Nigeria: Phase-Out of Leaded Gasoline in Nigeria.	
	4. Tanzania: Mini Hydropower Development Case Studies on the Malagarasi, Muhuwesi, and Kikuletwa Rivers. Volumes I, II and III	022/02 024/02
Latin America and the Caribbean (LCR)	1. Proposals to facilitate Increased Energy Exchanges in South America – Phase II.	016/01
	2. Population, Energy and Environment (EAP) English and Spanish.	020/02
	3. Estudio Comparativo sobre la Distribución de la Renta Petrolera, Estudio de Casos: Bolivia, Colombia, Ecuador y Perú.	023/02
	4. Latin America and the Caribbean Refinery Sector Development Report. Volumes I and II.	026/02
	5. The Population, Energy and Environmental Program (EAP). English and Spanish.	027/02
	6. Ecuador: Programa de Entrenamiento a Representantes de Nacionalidades Amazónicas en Temas Hidrocarbúricos.	025/02
	7. Nicaragua: Memoria Taller de Electricización Rural.	030/02
2003		
East Asia Pacific (EAP)	1. China: Air Pollution and Acid Rain Control. The Case of Shijiazhuang City and the Changsha Triangle Area.	267/03
	2. Vietnam's Petroleum Sector: Technical Assistance for the Revision of the Existing Legal and Regulatory Framework.	269/03
	3. Thailand: Why Liberalization May Stall in a Mature Power Market: A Review of the Technical and Political Economy Factors that Constrained the Electricity Reform in Thailand 1998-2002.	270/03
	4. Thailand: Reducing Emissions from Motorcycles in Bangkok.	275/03
South Asia (SAR)	1. 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.	262/03
	2. India: Access of the Poor to Clean Household Fuels.	
	3. Regional: 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.	263/03 268/03

Europe and Central Asia (ECA)	1. Turkey: Energy and Environment Review. 2. Romania: Private Sector Participation in Market-Based Energy-Efficiency Financing Schemes. Lessons Learned from Romania and International Experiences. 3. Russia: Russia Pipeline Oil Spill Study.	273/03 274/03 034/03
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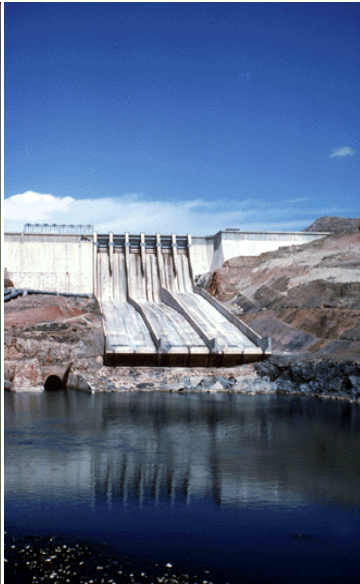
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List of Abbreviations and Acronyms

AAA	Analytical & Advisory Activities
ACR	Activity Completion Report
AFRREI	Africa Rural and Renewable Energy Initiative
ASTAE	Asia Alternative Energy Program
CAS	Country Assistance Strategy
CDM	Clean Development Mechanism
CG	Consultative Group
CIDA	Canadian International Development Agency
COP-7	Seventh Session of the UNFCCC Conference of the Parties
CSD14&15	Commission on Sustainable Development, 14 th and 15 th Sessions
DEC	Development Economics Department, World Bank
DFID	Department for International Development, UK
EE	Energy Efficiency
EER	Energy and Environment Review
ESMAP	Energy Sector Management Assistance Program
EU	European Union
GEF	Global Environment Facility
IAP	Indoor Air Pollution
LPG	Liquefied Petroleum Gas
LSMS	Living Standards Measurement Survey
M&E	Monitoring & Evaluation
MDGs	Millennium Development Goals
MNA	Middle East and North Africa Region
NGOs	Non-Governmental Organizations
OECD	Organization for Economic Co-operation And Development
OED	Operations Evaluation Department, The World Bank
PCF	Prototype Carbon Fund
PPIAF	Public-Private Infrastructure Advisory Facility
PRM	Poverty Reduction & Economic Management
PRSP	Poverty Reduction Strategy Paper
PV	Photovoltaic
RE	Renewable Energy
RPTES	Regional Program for the Traditional Energy Sector
SMEs	Small and Medium Enterprises
TA	Technical Assistance
TAG	Technical Advisory Group of ESMAP
UN	United Nations
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention for Climate Change
USAID	United States Agency for International Development
WBI	World Bank Institute
WBG	World Bank Group
WCD	World Commission on Dams
WHO	World Health Organization

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