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Joint UNDP / World Bank Energy Sector Management Assistance Programme

ESMAP
Annual Report
1992

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**JOINT UNDP/WORLD BANK
ENERGY SECTOR MANAGEMENT ASSISTANCE PROGRAMME (ESMAP)**

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ESMAP

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I. The Year in Review

The past year was one of further transition for ESMAP. Following the meeting of the Consultative Group in Geneva, major changes in the management of the Programme were introduced as a prelude to the elaboration of a new strategy and work plan for 1992-93. At the request of the Chairman of the ESMAP Consultative Group (the World Bank Vice President, Sector and Operations Policy), an internal audit of ESMAP was conducted. The country approach adopted at the end of 1990 served as a backdrop to new activities launched during the year, while substantial progress was accomplished in completing most of the activities that had started before 1990.

Immediately after the meeting of the Consultative Group in Geneva, the decision was taken to establish ESMAP as a separate entity within the World Bank. A Manager was appointed as of December 1, 1991, reporting directly to the Vice President, Sector and Operations Policy of the World Bank. It was also decided then that the Secretariat of the ESMAP Consultative Group would be placed under the new Manager of ESMAP to support him in the conduct of relations with the Consultative Group and the Technical Advisory Group.

These organizational changes took place in a year characterized by sluggish economic performance worldwide, a decrease for the second consecutive year in GNP per capita in developing countries as a whole, diminishing energy prices in real terms, and dwindling aid programs caused by persistent budget difficulties in many OECD countries. Despite mounting environmental concerns and the public debate generated by the United Nations Conference on Environment and Development (UNCED), energy issues in developing countries seemed to be perceived as relatively less important than in the past few years. Moreover, technical assistance programs have had to compete for resources within declining overseas development assistance funds. As a result, funding the ESMAP work plan proved highly uncertain, as even previously agreed financing commitments were sometimes seriously threatened and, on a few occasions, actually reduced.

Partially because of such uncertainties, and because of further difficulties donors encountered in attempting to commit themselves late during their budget

year, the preparation and implementation of the work program for the new ESMAP took longer than had been anticipated at the time of the November 1991 Consultative Group Meeting.

The new governance mechanism of ESMAP, with its interaction between members of the Consultative Group, the Technical Advisory Group (TAG), and the management of the Programme necessitates complex and often time-consuming consultations. Establishing this process has taken more time than expected, as the management of ESMAP, the TAG, and the donors had to adjust to these new arrangements and equip themselves with appropriate procedures to develop, review, and fund new proposals for ESMAP projects and country programs. Speedily setting up the new ESMAP proved particularly difficult during the preparation of the first work plan aimed at reflecting the recommendations of the Consultative Group and of the Commission that reviewed ESMAP's role in the 1990s.

After the TAG had requested major revisions to a work program prepared during the summer of 1991, an outline for a systematic country approach through a six-step project cycle for ESMAP activities was presented to the Consultative Group at its first meeting in Geneva in late November 1991. This outline was the result of consultations with ESMAP's cosponsors—the UNDP and the World Bank—and the TAG. Based on the outline endorsed in Geneva by the Consultative Group, a detailed strategy, the *ESMAP Strategy and Work Plan 1992-1993*, was prepared during the first months of 1992. It was discussed informally with the World Bank and the UNDP and then presented to the TAG, which accepted it on February 28, 1992, as representing a significant step in implementing the recommendation of the Commission as reiterated by the Consultative Group.

During the following weeks, detailed individual country and project proposals—involving extensive consultations with the country concerned, the World Bank, UNDP, and other major donors—were prepared for some 48 activities to be launched in 1992 and early 1993. These proposals were circulated to all donors for funding in May 1992, at a time when many donors had little flexibility left in allocating funds. The *Strategy and Work Plan for 1992-93* proposed activities for a total cost of about \$20 million per year. By the end of August 1992, some \$3.4 million had been secured from donors, excluding the World Bank.

It must be emphasized that the strengthened coordination introduced in the course of the preparation of the work plan between ESMAP and its operational counterparts has raised expectations from recipients or potential recipients of the Programme's assistance, as well as from the Operations arm of the World Bank. If ESMAP is unable to deliver its assistance in a timely manner because of funding difficulties, the credibility of the Programme will be seriously threatened.

ESMAP's funding difficulties have had a direct impact not only on the level of activities that the Programme has been able to launch during the year but also on the composition of its staff, the capacity of the Programme to maintain its level of expertise, and its ability to deliver the type of technical assistance for which it was established. The permanent high-level staff of ESMAP in the two operations divisions fell from 48 to 39 during the year. Funding and staffing issues and their implications are discussed in greater detail in the *Issues and Options* report, circulated separately to the members of the Consultative Group. The TAG also devoted one of its four meetings during the year to issues related to the future of ESMAP and is expected to present its conclusions to the ESMAP Consultative Group. A report on the proceedings of this meeting is also being circulated separately.

Despite these difficult conditions, ESMAP was able to continue work on ongoing programs and a limited number of new activities with very little disruption; 41 activities were completed during the period. This compares with a total of 37 activities completed during the previous period and 14 activities one year before. The number of new activities launched during the year decreased from 27 to 21, reflecting the difficulties in securing new funding. At the end of September 1992, some 35 new activities proposed in the ESMAP work plan for 1992-93 still remained to be funded.

During the period, several new potential recipient countries expressed interest in obtaining ESMAP's assistance. This was often a consequence of the significantly strengthened coordination between the Programme and the World Bank operational departments, the UNDP, and various bilateral aid programs.

As requested by the Consultative Group, the ESMAP strategy for household energy was revisited in early 1992. A report, *ESMAP Strategy for Household Energy*, was prepared and discussed with the Technical Advisory Group before being circulated to all members of the Consultative Group.

New, more stringent budget rules were introduced to better reflect actual costs incurred by the Programme. Another significant decision was the appointment of a financial administrator for ESMAP in December 1991. Systematic efforts have been made to keep donors better informed on the current situation of ESMAP and on the progress of its activities, notably through regular letters from the Chairman of the Consultative Group or the Manager of the Programme. Efforts are also under way to improve the quality of regular reports to and consultations with donors on ongoing activities. In the same vein, an initiative was launched to better disseminate the results of ESMAP work and enhance the visibility of the Programme in the energy profession and in the development aid community as a whole. As a part of this initiative, a quarterly newsletter, *The ESMAP Connection*, was launched in July 1992. The newsletter is intended to concentrate on recent operational experience and technical issues for which ESMAP has acquired a particular expertise. Its first issue was circulated to some 2,000 government, press, academic, research, and energy institutions in industrial and developing countries.

The demand for ESMAP's services has been steadily increasing during the year. On numerous occasions, ESMAP's recipients asked for the continuation, increase, or acceleration of ESMAP's involvement in the design and preparation of energy policy reforms. In several instances, the recipients contacted donors directly to urge them to provide them with support through ESMAP. It is evident that a technical assistance program such as ESMAP remains a most useful instrument in helping developing countries to enhance their capacity to manage their energy sectors. The growing momentum of economic reforms in Africa, Asia, and Latin America, as well as the radical transformation of economies in the countries of Eastern Europe and the former Soviet Union, call for the type of assistance that the Consultative Group envisaged ESMAP would provide.

The importance of energy efficiency and conservation and the linkage between ESMAP and environmental programs are discussed in *Energy and the Environment: ESMAP Beyond UNCED*, a report circulated to the Consultative Group as a companion to this *Annual Report*, as well in the discussion paper, *Issues and Options Facing ESMAP*.

II. ESMAP Organization and Policies

During the past year, important changes took place in ESMAP's organization and its position within its executing agency, the World Bank. ESMAP also reviewed its *modus operandi*, taking an approach similar to the one developed by the World Bank in its project cycle. Further, a comprehensive audit of the entire Programme was conducted by the World Bank's Internal Audit Department, and ESMAP's strategy for household energy was revisited.

Changes in ESMAP Policies, Organization, and Management

In December 1991, immediately after the 1991 meeting of the Consultative Group, ESMAP was reconstituted as a distinct unit in the Operations and Sector Policy Vice Presidency. It now operates under the direction of a Manager who supervises a Secretariat to the Consultative Group and two divisions—the ESMAP Strategy and Programs Division (ESMPD) and the ESMAP Operations Division (ESMOD)—which conduct the operational work of ESMAP. The Secretariat to the Consultative Group handles the interface with ESMAP's donors and the TAG. The Strategy and Programs Division is responsible for producing ESMAP country work program papers, the rolling two-year ESMAP work plan, assessment work, country energy strategy studies, and the provision of technical assistance in such fields as vocational and management training and energy planning. The Operations Division's major concerns are the conduct of technical studies related to (a) natural gas, oil, and refinery issues; (b) energy efficiency and the energy-environment link; (c) household and renewable/alternative energy; and (d) electric power and coal. Staff from both divisions are frequently deployed to work on the same task. Both divisions collaborate closely with each other and with the World Bank's operations complex on issues related to regulatory mechanisms, sector restructuring, and energy legislation.

Preparation of ESMAP Strategy and Work Plan

ESMAP treats the recipient country's needs as the organizing principle of its work and aims at taking a long-term commitment in a selected number of countries that have demonstrated interest in the ESMAP approach. As a result, ESMAP is now focusing on about 35 countries genuinely committed to using its assistance effectively and selected on the basis of a standard set of criteria (described in detail in Annex I of the *ESMAP Strategy and Work Plan 1992-1993*). ESMAP has developed a six-step approach to help it function in these countries. This serves as a checklist of the kind of analysis and sequence of actions the Programme might engage in. Depending on ESMAP's experience, its working relationship with the government, and overall knowledge of the energy sector in a specific country, ESMAP determines at which of the first five steps in its six-step approach it may be appropriate for the Programme to start its involvement. This new approach provides a flexible instrument enabling ESMAP to adjust to different and evolving conditions and circumstances in recipient countries. It also allows ESMAP's management to carry out appropriate consultations with its partners and exert its judgment as to the most suitable step through which this process should be initiated in a specific recipient country.

Audit of ESMAP

At the initiative of the CG Chairman, the World Bank carried out a thorough internal audit of ESMAP, including its origins, program emphases, donors, method of governance, management structure, operating policies, and administrative systems and procedures. The Chairman informed the membership of the results of the audit on May 11, 1992, and more extensive briefings were conducted informally by ESMAP staff with individual donors. The conclusions and recommendations of the internal audit of ESMAP fall into five broad areas as follows:

- a. **ESMAP's mandate—the need to define clearly the goals and priorities of the Programme**
- b. **Improved communications between ESMAP management, the Bank's operational staff, the UNDP, and bilateral donors**
- c. **Enhanced quality control of program activities**

- d. **Tightened budget and accounting systems and procedures**
- e. **Better financial planning and management.**

ESMAP has either already fulfilled the recommendations of the report or has activities under way that will result in the changes or improvements suggested.

ESMAP's mandate has been refined through extensive revisions of the Programme's strategy culminating in the production of the *ESMAP Strategy and Work Plan 1992-1993* and of new activity descriptions (distributed to donors in May and June). These efforts were enhanced greatly through the substantive interaction of ESMAP management and staff with the members of the TAG. For example, input from the TAG played an important role in the emergence of restructuring/privatization as a major new Programme emphasis.

Improved communication has been a high priority for ESMAP's management. With respect to World Bank Operations, ESMAP has sharply stepped up its coordination with Bank country departments on all aspects of its work. Activity briefs and country strategies have been hammered out in detail and now represent joint plans. ESMAP's technical assistance activities are increasingly coordinated with lending operations at the appraisal and implementation stages. Strong linkages with the lending program characterize each of the subsectors of ESMAP work, including household energy. With respect to donors, as already mentioned, ESMAP has made strong efforts to improve the dialogue on substantive program issues, to make transparent its expectations about financial and progress reporting, and to increase the frequency of both formal and informal communications. Also, particular care is now taken to coordinate closely with UNDP resident representatives on country program issues.

The audit recommended that the quality of ESMAP's work be strengthened through more rigorous review of reports, monitoring of project progress against plans, and evaluation of project results. In response, the management of ESMAP has considerably tightened internal review procedures and improved project monitoring (e.g., through more detailed quarterly progress reports, which represent one of ESMAP management's principal quality "checkpoints"). These reports on ongoing activities are circulated to all the members of the Consultative Group and to the TAG.

With respect to evaluation, the auditors recommended that an Activity Completion Report (ACR) be prepared at the end of each activity, comparing the objectives, schedule, and cost of each activity with its ultimate results. As a result, ESMAP has established the ACR as part of the sixth step of its implementation process and signaled its intent to conduct broad retrospective reviews of ESMAP's "product lines" at appropriate intervals.

Regarding budgetary controls, the Programme has responded strongly to the audit's recommendations for a more explicit audit trail of project budget revisions; more careful review procedures for new projects being considered for transmission to donors; a clear requirement that full funding for an activity be in place before the initiation of project work; better equipment inventory control; and improved budget, accounting, and monitoring systems. While most of these improvements have already been instituted, work on the new budget information system is just now coming to fruition. Final steps are expected over the next few months. New and simplified reporting formats for ESMAP's use with donors have been discussed with a number of donors, and standard reporting formats should be in place shortly after the CG meeting.

The auditors asked ESMAP to correct weaknesses in its financial planning practices. Thus, ESMAP management has spent considerable time putting together a current-year financial plan that is feasible in light of contributions on hand and expected over the next 6 to 12 months. A plan that will avoid a budgetary overrun of the kind that had to be covered by the World Bank at the end of the last fiscal year (June 30, 1992) has now been firmed up and reviewed by the World Bank's budget authorities. In creating this plan, special attention has been given to linking together funding availabilities, project implementation schedules, and staffing requirements.

Review of ESMAP Strategy for Household Energy

At its Geneva Meeting, the ESMAP Consultative Group had requested that ESMAP develop a strategy paper for household energy activities as soon as possible. A report was prepared in the early months of 1992 and discussed at the subsequent meeting of the TAG in April 1992 in Washington, D.C. The paper, *ESMAP Strategy for Household Energy*, circulated to donors last spring, reviews ESMAP experience, concentrated to a large extent in urban areas, and proposes

a modified approach for the subsector in line with the *ESMAP Strategy and Work Plan 1992-1993*.

ESMAP review of its strategy in the household subsector concludes that the Programme should maintain a strong presence in this field for several reasons. First, in many developing countries, particularly the poorest, household energy work is central to the country-based strategy approach sought by ESMAP. Second, institutions dealing with household energy are very often weak and fragmented. Hence, enhancing local capabilities and institutional capacity is a key part of overall development efforts.

A cross-sectional review of ESMAP work in the household energy field indicates that the rapid growth in the numbers of urban poor is exacerbating the breakdown of traditional energy systems whose management practices have not changed. Furthermore, the transition from traditional to modern energy has been marked by distortions such as unserved demand, high costs, and accelerated environmental degradation. There is a growing consensus, based on ESMAP's relatively short but intensive involvement in household energy strategy studies in some 22 countries since 1987, that the most critical issues for strategy formulation emanate from the ongoing transition by low-income households from the use of traditional biomass fuels to alternative fuels such as kerosene, LPG, and electricity. A successful transition to more efficient and environmentally benign forms of energy is particularly critical for women and children, who are the main victims of indoor air pollution resulting from the inefficient burning of traditional fuels.

The evidence collected by ESMAP shows that government policy plays a very important role in influencing households to choose one fuel over another. It also shows that the promotion of LPG as a cooking fuel for very poor households (i.e., with income of less than \$25 per capita per month) is likely to fail. In contrast, electricity is adopted once it becomes available by households in almost all income groups, probably because of the high value households put on lighting. It also appears that households continue to use woodfuels, especially charcoal, even as their incomes rise, except in large metropolitan areas with population over 1 million, where access to woodfuel becomes too problematic.

In rural areas, two main trends provide the basis for ESMAP's work. The first involves the increasing use of electricity, petroleum fuels, and kerosene as well as some renewable forms of energy for productive and household activities.

The second and more disturbing trend is that in some rural areas people who previously used fuelwood for cooking are moving down the energy ladder to straw and dung. This not only leads to environmental degradation but places much of the burden of energy supply on women. Thus, positive innovations in rural energy systems can alleviate that burden through the introduction of technologies such as water pumps, grain mills, and modern forms of electric lighting. In assessing appropriate rural energy strategies, ESMAP's role will be to identify the bottlenecks and barriers to the provision of modern forms of renewable energy and alternative fuels. These strategies also require the creation of energy policies and institutions conducive to the participation of the private sector and of the rural population itself.

ESMAP's work on household energy should continue to focus on urban interfuel substitution and energy transition, energy demand management, appropriate policies and strategies for energy pricing, and better management of existing supplies of both wood and modern fuels.

III. ESMAP Operations

The number of activities completed during the period increased by more than 10 percent over 1990-91, despite staff reductions, and was almost three times as much as the number of activities completed in 1989-90. Of the 47 ongoing activities at the end of September 1992, 21 had been launched after October 1, 1991 and only 9 had begun more than two years ago. Moreover, the proportion of overall energy strategy activities completed by the ESMAP Strategy and Programs Division slightly increased to 24 percent of all activities completed during the year, compared with 21 percent during the previous period. In addition, almost 50 percent of the new activities launched during the year were in the field of broad sector strategy work, in line with ESMAP's new orientation.

Strategy and Programs Division

The ESMAP Strategy and Programs Division (ESMPD) is responsible for the definition and constant updating of the Programme's technical assistance priorities and strategies in the selected core countries. It also handles broad energy sector work such as energy assessments and energy strategies. During the last year, ESMPD also was responsible for finalizing the *ESMAP Strategy and Work Plan 1992-93*.

Within the framework of ESMAP's work plan, and in accordance with the new country-based focus and the six-step approach, five ESMAP Country Papers (Bolivia, Colombia, Poland, Senegal, and Tanzania) were prepared by ESMPD for discussion with the respective governments and the appropriate Operations departments of the World Bank. During the period under review, five energy assessments were completed, for the Central African Republic, Guatemala, Namibia, Nigeria, and the Solomon Islands, and five ESMAP Country Papers were published, for Bolivia, Colombia, Morocco, Nigeria, and Poland (see Box 1 for a resume of ESMAP's work in restructuring Poland's energy sector).

BOX 1: RESTRUCTURING POLAND'S ENERGY SECTOR

ESMAP has been involved since 1990 in detailed restructuring work in the energy sector in Poland, and a first comprehensive set of studies on the subject was recently completed. These studies aim at identifying specific restructuring measures in each of the major energy subsectors: hard coal, hydrocarbons, electricity and lignite, and district heating.

ESMAP's restructuring work in Poland has focused on structural issues and assessed detailed reform options to improve energy efficiency, notably through market mechanisms, as essential ingredients to restore economic growth. ESMAP has made detailed proposals for restructuring key enterprises in an enhanced framework that relies largely on the private sector and is more conducive to joint ventures. The proposed new structures should also allow enterprises to take proper account of environmental and other external costs. Clearly, the thrust of ESMAP's recommendations for the energy sector in Poland is the promotion of competitive and efficient commercial behavior, while recognizing that the needed radical changes will have to be carefully managed to avoid unnecessary hardship and disruption in the transition process.

The conclusions and recommendations of ESMAP studies were discussed during seminars with Polish policymakers in April 1991 and eventually were largely accepted by the government. However, it became apparent that implementing these recommendations would require considerable resources and sustained political commitment over the medium to long term.

The Polish government then asked ESMAP to help in establishing an Energy Restructuring Group (ERG) to advise on restructuring issues during the implementation phase. The group, formed and managed with ESMAP's assistance through the Implementation of Energy Sector Restructuring I activity, includes foreign experts in electricity, coal, natural gas, district heating, regulation, energy law, privatization, and corporate planning. The ERG works in close cooperation with counterpart staff in the Polish government so as to ensure continuity and the national intellectual ownership of the process. Thus, coordinating groups have been established for electricity, district heating, natural gas, and coal, in liaison with the Ministry of Industry and Trade, which has overall responsibility for the restructuring program, and the Ministry of Privatization, the Ministry of Planning and Physical Construction, and the Anti-Monopoly Office. The ERG also maintains close contacts with key enterprises in the energy sector. More recently, ESMAP was asked to help sector entities design their operational procedures within the new structures.

In addition to restructuring issues, ESMAP has also supervised studies for the natural gas subsector and provided extensive technical assistance to the Polish government on the legal and contractual framework for petroleum exploration and production, notably the preparation of a model contract to be used in negotiations with foreign companies.

ESMPD also provided valuable technical support to the World Bank operations departments in energy policy, energy pricing, and institutional reforms, particularly in the petroleum subsector. ESMPD staff also helped during energy projects preparation for the Sahel region (Mali, Mauritania, and Senegal; see Box 2 on Mali), East Africa (Tanzania); South America (Bolivia and Honduras); Eastern Europe (Romania and Czechoslovakia) and South Asia (Vietnam). In addition, ESMPD participated in the preparation of broader analyses and reports, such as a review of energy issues in Central and Eastern Europe.

During the year, ESMPD was particularly attentive to energy and environment linkages and broadened its activities to more explicitly include these questions in its strategy and policy work. In that regard, two important activities initiated and carried out during the period merit highlighting. First, in association with the World Bank's Operations and the Global Environment Facility (GEF), an Energy/Environment Planning Review for Indonesia was initiated, as part of a broader review of the main environmental issues facing the country. The second activity concerns the support provided by ESMPD to the GEF on two occasions: first, during the negotiating sessions on the Framework Convention on Climate Change prior to the UNCED Summit Meeting in Rio de Janeiro, and, second, in the preparation of two GEF working papers discussing strategies for greenhouse gas abatement.

Operations Division

The ESMAP Operations Division (ESMOD) has conducted activities in the oil and gas, power, and renewable and household subsectors. Thirty-one of these activities were completed during the year. Emphasis was placed on gas market development, gas supply improvement, institutional and regulatory reform in the gas sector, increasing the efficiency of electricity supply and use, streamlining of biomass fuels supply and encouraging their substitution, evaluation of renewable energy potential, definition of subsectoral policies (in particular pricing policies), promotion of energy sector restructuring and enhancement of private sector participation, definition of environmental policies for the energy sector, and strengthening of national and regional energy institutions.

BOX 2: MALI HOUSEHOLD ENERGY STRATEGY

Between 1989 and 1991, with financial support from the government of the Netherlands, ESMAP helped the government of Mali in designing an integrated, operational, and economically viable strategy to address the problem of forest degradation. This degradation is due in part to woodfuel (wood and charcoal) production for urban household and small commerce use, as well as to agricultural activities. The objective of ESMAP study was to find ways to improve consumers' access to modern and more efficient energy sources and equipment. The work was conducted with significant inputs from national consultants and in close collaboration with both the National Directorate of Hydraulics and Energy and the National Directorate of Hydrology and Forestry.

A number of issues had to be addressed to design a coherent household energy strategy, including the rapid growth of charcoal use—produced with inefficient and environment-damaging techniques; distortions in woodfuels, kerosene, and LPG prices, that further encourages inefficient woodfuel production and use; the economic impact of encouraging the use of imported household petroleum fuels; the generally unsuccessful efforts to improve supply in wood-deficit areas; an institutional, legal, and regulatory framework ill-adapted for managing wood resources; and poor coordination of efforts in the sector.

The ESMAP study recommends a strategy in line with the government's National Desertification Control Program. This strategy has two main components: a demand component, which includes the development and promotion of modern, efficient energy equipment and the implementation of financing mechanisms; and a supply component dealing with the preparation and implementation of woodfuel supply master plans for major cities, assistance to wood and charcoal producers, deadwood recovery, and wood resources management in selected areas. Implementation of this strategy was estimated to cost about US\$9 million over five years. Recurrent costs would be largely offset by additional fiscal revenues from woodfuels.

The Malian government has already started implementing the strategy with the creation, in September 1991, of a Strategy Monitoring Unit. The unit operates as an element of the Second Power Project financed with a credit from the International Development Association (IDA). It will prepare a detailed action plan for each component of the strategy and mobilize the necessary funding. Implementation will be coordinated with other relevant development projects, such as the Natural Resource Management Project, the Private Sector Development Project, and the LPG Promotion Program. Several donors have indicated interest in cofinancing, and a GEF grant for close to US\$3 million is being considered.

Gas Unit. The completion of reports on gas strategy plans for Morocco, Bolivia, Mozambique, and Hungary were among the main achievements of ESMOD during the year. These reports proposed development strategies and included prefeasibility studies important for decisionmakers in recipient countries, notably regarding the restructuring of the gas subsector, regulation and energy pricing, and the identification of projects suitable for World Bank financing.

The ESMAP Gas Unit represents a unique concentration of gas expertise in an international institution. It continued to serve as a focal point in bringing together key policy- and decisionmakers from industrial and developing countries to share experiences and discuss issues affecting the development and trade of natural gas. The group organized a seminar on *Issues and Options for Natural Gas Trade in Eastern Europe* and another on the *Design of International Gas Contracts*. Both seminars were attended by prominent government and other officials from the gas subsector. The proceedings of these seminars are being prepared for publication.

Power/Efficiency Unit. Three major power efficiency studies in Ecuador, Malawi, and Tanzania were also completed, as well as a minihydro rehabilitation study in Uganda, a diesel rehabilitation study in Indonesia, and an assessment of rural power issues in China. In addition, a power interconnection prefeasibility study in the SADCC countries and a Colombia power restructuring study, still in progress, were milestones of the ESMOD work program. For an overview of some of ESMAP's power system work, see Box 3.

Three substantive industrial energy conservation analyses—in Tanzania, Ghana and Senegal (this last one to be completed soon after the end of the fiscal year)—were also part of ESMOD's work. The experience gained during these technical and pilot projects will allow ESMAP to embark on more integrated approaches embedding energy efficiency within broader energy strategy options. Notably, an ongoing energy efficiency study for Colombia will benefit from this experience and is indicative of the Programme's shift toward a more integrated approach, with energy efficiency considered among strategic options to cope with energy demand and focusing on institutional issues and implementation programs.

BOX 3: COMPUTER APPLICATIONS FOR POWER DISTRIBUTION SYSTEM ANALYSIS AND LOSS REDUCTION

While power utilities are generally familiar with computerized applications in generation and transmission planning, the development of distribution systems has traditionally been left to various ad hoc techniques. The greater prestige attached to large production and transmission projects, combined with the complexity and magnitude of collecting data for a well-documented computerized distribution project, have generally resulted in a bias to the detriment of such projects in allocating financial and other resources. This situation is now changing as efficiency concerns are gaining ground in many countries. As a result, a greater emphasis is now placed on the elements of power networks close to ultimate consumers.

In fostering this change of attitude, ESMAP has been active in helping introduce the latest technological development in distribution system planning to a number of developing countries. ESMAP also helped organize the training of utility personnel in the application of these modern techniques. Such an approach appears to be an effective way for ensuring that due attention is paid to reducing losses in power distribution systems and optimizing network development proposals. ESMAP's work in this field encompasses four areas of activities: (1) employing microprocessor-based instrumentation that can be placed at selected locations in a distribution network for subsequent data down loading to a personal computer; (2) using a "digitizer" and associated software to build a digital data base of electrical and geographic characteristics; (3) modeling the system and using distribution network analysis software to study network performance; and (4) subjecting the results of the load flow studies to techno-economic analyses and evaluating alternative development proposals.

Programs with such components have been carried out by ESMAP in Tanzania and Kenya. In each country local personnel were actively involved in all aspects of the work, notably the digitizing of network maps and assimilation of network data with microprocessor-based instruments. The personnel trained are now able to operate the various computer programs and undertake the required analysis work. In Tanzania, specific projects identified through this approach for loss reduction and network development have been quickly selected by donors for funding. For example, the Swedish International Development Authority (SIDA) is funding the reactive compensation required at Dar es Salaam to improve voltage conditions in the Tanzanian capital city. In Kenya, a similar program is ongoing. It should be completed by the end of 1992 and should result in other network development proposals. Another comparable program was launched in July 1992 in China, where a pilot loss reduction study is under way.

This program has already proved successful in the transfer of technology and should help developing countries make a quantum leap in the technological application of distribution system planning techniques. Indeed, the expected benefits transcend the identification of specific development proposals for short-term loss reduction and include the building of local expertise, which is the only way to ensure that loss levels will remain under control in the future.

Household/Alternate Energy Unit. ESMAP's household energy strategy and activities have been discussed above. In sum, fifteen activities in the household energy and renewable energy subsectors were completed. These included household energy strategy studies in Bolivia, Cameroon, Guinea, Laos, Mali, and the Philippines; training-related activities in rural energy in Zimbabwe, China, and the SADCC region; and an Indian Windfarm study. By the end of September 1992, 15 other activities, notably a household energy strategy study in Chad, were nearing completion. Studies on biomass utilization in Indonesia, Jamaica, and Rwanda were also in progress.

As already mentioned, the activities conducted by ESMAP during the year were developed in close cooperation with the operational departments of the World Bank and with the Global Environment Facility. Furthermore, direct operational support related to prospective World Bank projects was provided by ESMAP in Iran, Tanzania, and the FSU. The ESMAP operational staff routinely liaised with the UNDP field offices and key donors in specific countries. It also continued to cooperate, notably in Africa and India, with nongovernmental organizations concerned with conservation of energy and protection of the environment.

Tables on ESMAP Operations

The tables on the following pages provide a summary of ESMAP operations, by country and subsector, completed or launched between October 1, 1991, and September 30, 1992. Comprehensive lists of activities completed or launched during the year, as well as activities in progress at the end of September 1992, are in Annexes 2 to 4. These annexes also provide information on starting dates of activities, total budget, and amounts committed for each of them out of donor contributions.

Table 1. Activities Completed, October 1, 1991 to September 30, 1992 (Amounts in U.S. dollars)

Country/Region	Strategy & Sector Review		Energy Efficiency & Power		Natural Gas & Oil		Household & Renewable		Restructuring		Total	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount
Africa												
Angola			1	625,955							1	625,955
Centr. Afr. Rep.	1	145,233									1	145,233
Cameroon							1	658,436			1	658,436
Côte d'Ivoire			1	1,022,801	1	68,232					2	1,091,033
Ghana			1	293,158			1	239,555			2	532,713
Guinea							1	265,358			1	265,358
Mali							1	385,097			1	385,097
Malawi			1	180,315							1	180,315
Mozambique					1	202,025					1	202,025
Namibia	1	231,041									1	231,041
Nigeria	1	513,362									1	513,362
Rwanda							1	134,082			1	134,082
SADCC							1	147,841			1	147,841
São Tomé & Príncipe			1	329,369							1	329,369
Tanzania	1	15,419	1	275,443							2	290,862
Uganda							1	131,520			1	131,520
Total	4	905,055	6	2,727,041	2	270,257	7	1,961,889	0	0	19	5,864,242
Asia & Pacific												
China			1	268,114	1	75,407					2	343,521
India							1	203,224			1	203,224
Laos							1	115,631			1	115,631
Philippines							1	375,341			1	375,341

Solomon Islands	1	228,002									1	228,002
Total	1	228,002	1	268,114	1	75,407	3	694,196	0	0	6	1,265,719
Central and Eastern Europe												
Hungary					1	118,953					1	118,953
Poland	1	***									1	0
<i>Region</i>					1	140,927					1	140,927
Total	1	0	0	0	2	259,880	0	0	0	0	3	259,880
Middle East & North Africa												
Morocco	1	9,154			1	516,244					2	525,398
Total	1	9,154	0	0	1	516,244	0	0	0	0	2	525,398
Latin America & the Caribbean												
Bolivia	1	25,379					1	458,822			2	484,201
Colombia	1	14,864									1	14,864
Ecuador			1	274,317							1	274,317
Guatemala	1	87,671									1	87,671
Total	3	127,914	1	274,317	0	0	1	458,822	0	0	5	861,053
<i>Global</i>			1	98,417	1	57,225	4	962,766			6	1,118,408
Total	0	0	1	98,417	1	57,225	4	962,766	0	0	6	1,118,408
GRAND TOTAL	10	1,270,125	9	3,367,889	7	1,179,013	15	4,077,673	0	0	41	9,894,700

Note: Amount figures represent commitments as of September 30, 1992. In some instances limited additional amounts have to be added to take into account costs such as the production of a final (Blue Cover) report after the activity is considered completed (finalization of Green Cover report).
 *** Activity conducted with World Bank's in-kind resources.

Table 2. Activities Launched, October 1, 1991 to September 30, 1992 (Amounts in U.S. dollars)

Country/Region	Strategy & Sector Review		Energy Efficiency & Power		Natural Gas & Oil		Household & Renewable		Restructuring		Total
	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	
Africa											
Angola									1	1,217	1,217
Cameroon	1	0									1
Nigeria	1	501,896									501,896
Mozambique					1	0					1
Zambia	1	3,000									3,000
Zimbabwe	1	21,625	1	131,643							153,268
Regional SADC			1	513,084							513,084
Total	4	526,521	2	644,727	1	0	0	0	1	1,217	1,172,465
Asia & Pacific											
China			2	57,808							57,808
Indonesia	1	35,902									35,902
Philippines			1	67,629							67,629
Vietnam							1	223,607			223,607
Total	1	35,902	3	125,437	0	0	1	223,607	0	0	304,546
Central and Eastern Europe											
Armenia	1	***									0
Poland	1	***			1	74,128					74,128
Total	2	0	0	0	1	74,128	0	0	1	78,909	153,057
Middle East & North Africa											
Armenia	1	***									0
Poland	1	***			1	74,128					74,128
Total	2	0	0	0	1	74,128	0	0	1	78,909	153,057

Country/Region	Strategy & Sector Review		Energy Efficiency & Power		Natural Gas & Oil		Household & Renewable		Restructuring		Total	
Egypt					1	0					1	0
Total	0	0	0	0	1	0	0	0	0	0	1	0
Latin America & the Caribbean												
Ecuador	1	219,417									1	219,417
Guatemala	1	87,579									1	87,579
Nicaragua	1	2,700									1	2,700
Total	3	309,696	0	0	0	0	0	0	0	0	3	309,696
GRAND TOTAL	10	672,119	5	770,164	3	74,128	1	223,607	2	80,126	21	2,020,144

Note: Amount figures represent commitments as of September 30, 1992. In some instances limited additional amounts have to be added to take into account costs such as the production of a final (Blue Cover) report after the activity is considered completed (finalization of Green Cover report).

*** Activity conducted with World Bank's in-kind resources.

IV. ESMAP Finances

The Programme's finances have been the subject of intense scrutiny over the past year from the standpoint of adequacy, budget controls, and information systems. Because of the sharp decline in donor funding—only \$3.4 million of bilateral and UNDP contributions have been received to date in CY92—ESMAP faced a serious cash flow problem by the April-May 1992 period. Funds on hand were not sufficient to both, maintain the Programme's long-term technical staff and finance the nonsalary costs of ongoing projects as agreed with individual donors. A shortfall of \$2.2 million in staff costs was identified and covered by the World Bank, out of its administrative budget. The World Bank's decision to assist in this way represented important support for the continuation of the Programme.

At the same time, the internal audit commissioned by the CG Chairman recommended significant improvements in the Programme's budget formulation and monitoring systems and procedures. These have since been established or are in process. A more conservative approach to financing of consultants, travel, and equipment has been put in place, which requires availability of donor funds for one year of project activity prior to the approval of these expenditures. Hiring of long-term staff is also undertaken only when funding is assured—hence, the decline of ESMAP staffing levels over the past year. And, finally, an information system to plan, account for, and monitor the Programme's finances is well on its way to completion.

To implement the work plan of ESMAP for 1992-93, in May 1992 the management of ESMAP and the Secretariat of the Consultative Group undertook a major effort to mobilize new and additional funding from ESMAP's traditional donors. Although the donors found themselves in agreement with the general approach of the work plan as well as with specific proposals presented to them on this occasion, their capacity to respond positively in the short-term appeared somewhat limited. The immediate consequences of this situation are discussed in a separate report *Issues and Options Facing ESMAP*.

Receipts

Receipts in calendar year 1991 (Table 3) totaled \$18.5 million, of which 7 percent was provided by the UNDP, 22 percent by the World Bank, and 71 percent by bilateral donors. The decline in receipts for the full calendar year 1992 is expected to be substantial, falling to an estimated \$11.0 million, a reduction of 40 percent over the previous year. As of the end of August, some \$6.9 million in contributions had been received, including that of the World Bank. The World Bank contribution is expected to increase in 1992 due in part to the creation of a new management structure for ESMAP and efforts to improve the Programme's systems and procedures. The World Bank provided one-time support to ESMAP in calendar year 1992 (\$2.26 million) to help finance the cost of the Programme's long-term technical staff; however, this one-time support is not reflected in the receipts shown for calendar year 1992 in order to permit a more accurate comparison of total contributions across calendar years.

A noteworthy development was the resumption of Norwegian support, which had been suspended during 1991 pending an independent evaluation of ESMAP by the Norwegian government. The evaluation was carried out by a consultant retained by the Norwegian government, which, taking cognizance of its findings, decided to renew its funding for the Programme at the level of NKR 6.5 million per year for the 1992-93 period. The contribution is provided as core funding, which means that it can be used flexibly within the Programme. For that reason, it represents especially effective financing.

Expenditures

Calendar year 1991 expenditures (Table 4) totaled \$18.2 million, including the costs of the CG, TAG, and ESMAP Secretariat. Total expenses on ESMAP tasks/projects were \$17.5 million, reflecting a relatively high completion rate of ongoing projects.

Calendar year 1992 expenditures are expected to total \$14.1 million, reflecting a substantial decline in availability of donor contributions. Total expenditures are projected to fall by 23 percent and contributions by 40 percent compared with calendar year 1991. Calendar year 1992 expenditures on ESMAP tasks/projects are expected to fall in all areas (e.g., in the "consultants" category a 36 percent decline from calendar year 1991 is foreseen). In calendar year 1992

the World Bank provided one-time support to ESMAP in the amount of \$2.26 million in addition to its customary contribution. Expenditures in connection with this one-time support are shown separately in Table 4.

Calendar year 1993 estimates are based on the financial requirements of the *Strategy and Work Plan 1992-1993* (February 1992). Expenditures including governance costs would total \$19.6 million and would represent a 39 percent increase compared with calendar year 1992 and 8 percent compared with calendar year 1991. Expenditures on ESMAP tasks/projects would total \$18.9 million, reflecting a stepped-up level of project activity consistent with the Programme described in the February 1992 paper and in the paper entitled *Issues and Options Facing ESMAP* (October 1992) prepared for the 1992 meeting of the Consultative Group. These expenditure estimates imply UNDP/World Bank/bilateral contributions of \$20 to \$21 million annually.

Cash Position

At the end of calendar year 1991, ESMAP's cash balances in externally funded accounts totaled \$12.5 million. Of the total, about 5 percent was available as fully flexible core funding, and 95 percent was earmarked for specific projects with budgets agreed to between ESMAP, individual donors, and recipient countries. Thus, the bulk of ESMAP's funding at that time was tightly programmed and could not be freed up for discretionary purposes or to meet emergencies (e.g., the shortfall in funding of ESMAP's long-term staff salaries experienced in calendar year 1992 that was met by the World Bank). About 20 percent of the balances pertaining to specific projects were for UNDP country projects (IPFs). These projects utilize ESMAP primarily in a supervisory capacity and do not generally include substantial funding for ESMAP technical staff input.

Table 3. Statement of Receipts

	Actual CY91 US\$	Actual Jan-Sept US\$
DIRECT SUPPORT OF ESMAP		
UNDP DGIP	990,000	0
UNDP IPF	240,000	-80,000 ^a
World Bank	4,113,500	3,510,000 ^b
Belgium	240,384	379,276
Canada	1,010,858	569,807
Denmark	692,387	332,768
Finland	355,610	0
France	1,152,615	0
Germany	422,060	0
The Netherlands	3,173,250	71,613
Norway	0	1,320,922
Sweden	4,095,152	0
Switzerland	716,282	8,500
United Kingdom	783,419	622,744
United States	540,000	160,000
TOTAL	18,525,517	6,895,630
 Memo Item:		
Consultant Trust Funds ^c in Support of ESMAP	120,958	177,333

Note: This table represents actual funds received by ESMAP during each calendar year. It does not include pledges/commitments from donors until the funds are transferred to ESMAP accounts.

^aDue to an overall budget cut in UNDP/IPF resources, a previously agreed contribution was reduced by shown amount.

^bDoes not reflect World Bank one-time support to ESMAP (\$2.26 m.) to help meet shortfalls in funding for staff costs.

^cSupport from France, Japan and the USA.

Table 4. Statement of Expenditures

	CY91	CY92 ^a	CY93 ^b
EXPENSES ON ESMAP TASKS			
STAFF SALARIES			
World Bank Funded Higher Level Staff	1,580.6	1,917.7	2,013.6
World Bank Funded Support Staff	301.1	327.8	343.0
Donor Funded Long-Term Staff	3,081.0	773.0	3,641.0
Donor Funded Support Staff	1,058.0	443.0	769.0
Subtotal	6,020.7	3,461.5	6,766.6
CONSULTANTS			
World Bank Funded Consultants	81.2	249.3	239.0
Donor Funded Short-Term Consultants/Travel	3,931.0	2,347.0	4,779.0
Donor Funded Local Staff	870.0	586.0	950.0
Donor Funded Subcontracts	2,136.0	1,276.0	575.0
Contractual Services	26.2	37.0	36.5
Subtotal	7,044.4	4,495.3	6,579.5
STAFF TRAVEL			
World Bank Funded	151.4	205.7	216.4
Donor Funded	1,255.0	713.0	1,520.0
Subtotal	1,406.4	918.7	1,736.4
OTHER			
World Bank Funded			
Equipment/Depreciation	27.3	47.1	61.6
Internal Computing	64.0	81.9	92.3
Communications	98.6	86.4	73.4
Office Occupancy Costs	1,489.5	1,368.5	1,485.6
Miscellaneous	2.1	15.1	21.4
Donor Funded			
Training	265.0	168.0	625.0
Equipment	753.0	125.0	882.0
Communications, Reporting and Translations	170.0	92.0	321.0
Miscellaneous	185.0	36.0	219.0
Subtotal	3,054.5	2,020.0	3,781.3
SUBTOTAL	17,526.0	10,895.5	18,863.8
Expenditures related to World Bank Special Support to ESMAP (1992 ONLY) ^c		2,260.0	
TOTAL EXPENSES ON ESMAP TASKS	17,526.0	13,155.5	18,863.8

^aActuals through end of August, estimates for remainder of year. ^bExpenditure estimates based on program consistent in size with revised *ESMAP Strategy and Work Plan* (February 1992). ^cIn CY92 the World Bank provided \$2.26 million in one-time support to ESMAP to help meet shortfall in funding staff costs.

	CY91 US\$	CY92 ^a US\$	CY93 US\$
GOVERNANCE EXPENSES			
<u>Consultative Group (CG) and the Secretariat</u>			
STAFF SALARIES			
World Bank Funded Higher Level Staff	207.7	259.5	239.4
World Bank Funded Support Staff	0.0	0.0	0.0
Donor Funded Long-Term Staff	55.4	97.3	0.0
Donor Funded Support Staff	48.5	57.5	49.0
Subtotal	311.6	414.3	288.4
CONSULTANTS			
World Bank Funded Consultants	0.0	0.0	0.0
Donor Funded Short-Term Consultants/Travel	8.6	0.0	0.0
Donor Funded Local Staff	0.0	0.0	0.0
Donor Funded Subcontracts	0.0	0.0	0.0
Contractual Services	0.0	0.0	0.0
Subtotal	8.6	0.0	0.0
STAFF TRAVEL			
World Bank Funded	6.6	7.0	7.0
Donor Funded	56.7	70.0	40.0
Subtotal	63.3	77.0	47.0
OTHER			
World Bank Funded			
Equipment/Depreciation	0.0	0.0	0.0
Internal Computing	8.0	8.0	6.0
Communications	3.8	9.0	6.1
Office Occupancy Costs	63.3	63.5	56.6
Miscellaneous	2.1	3.0	3.0
Donor Funded			
CG Meeting	63.5	75.0	80.0
Equipment	6.7	3.0	3.3
Communications, Reporting and Translations	6.7	2.0	2.0
Miscellaneous	1.1	12.0	5.0
Subtotal	155.2	175.5	162.0
CG and Secretariat Expenses	538.7	666.8	497.4
<u>Technical Advisory Group (TAG)</u>			
Honoraria	32.4	75.2	90.2
Travel	48.4	82.0	86.1
Consultants	10.0	49.7	0.0
Staff Travel	10.7	15.2	16.7
TAG Meetings	2.0	25.2	27.7
TAG Expenses	103.5	247.3	220.7
TOTAL GOVERNANCE EXPENSES	642.2	914.1	718.1
TOTAL PROGRAMME EXPENSES	18,168.2	14,069.6	19,581.9

^a Actuals through end of August, estimates for remainder of year.

ANNEXES

**FINAL COMMUNIQUE OF THE ESMAP CONSULTATIVE GROUP (CG)
GENEVA, NOVEMBER 22, 1991**

The Consultative Group (CG), meeting for the first time received the report of the Technical Advisory Group (TAG), which commented upon the proposed work program of ESMAP for the coming twelve months.

The CG endorses the view expressed by the TAG that ESMAP "is in a unique position, in terms of world organization, to contribute to a major needed function in the energy field in the developing world. No other organization enjoys the privileged position that ESMAP does, to be able to view the international energy needs of developing nations, their ability to fulfill those needs, and the requisite strategy needed to orchestrate the respective energy programs." The CG accepts the TAG's report, which is attached as Annex I and is in full support of the recommendations. In the CG discussion of the Work Plan, the following specific conclusions were reached:

1. ESMAP in its country based approach should reflect the needs of the developing countries for strategic energy sector appraisal and should encourage cooperation and exchange of information. An important objective for ESMAP to pursue is to build institutional capacity and capability for energy planning and management in the developing countries, including those aspects to do with the efficient production and use of energy. To this end, ESMAP must actively involve local governments, institutions, and consultants in its activities. In those countries where local expertise is weak or inadequate, ESMAP should specifically attempt activities to create appropriate capabilities and expertise.
2. ESMAP and the Operations arm of the Bank should both make strenuous efforts to improve their interaction. In order to make greater impact upon the Bank's energy activities, ESMAP should improve its ability to respond to requests for assistance from that arm, consistent with the objectives of the Work Plan.
3. Bilateral donors should be involved at an early stage in the assessment process. ESMAP should endeavor to widen its interaction with other organizations, in particular the regional banks, and organizations.

4. The CG noted that:

- a. a large percentage of the present work volume will be completed by mid-1992. Therefore, during 1992 an increasing staff capacity will become available for the new ESMAP work program.**
- b. ESMAP should consider environmental issues more explicitly in its assistance to the development of national energy strategies and in energy work programs, taking into account global environmental considerations that influence national policies in the energy sector.**
- c. Recognition should be given to the major importance of the household energy sector in countries having an important need to provide energy services for low income rural and urban households. ESMAP should develop a strategy paper on household energy as soon as possible, that indicates how this sector should be addressed. Special attention should be given to the institutional and financial framework of this subsector.**
- d. There was agreement that independent evaluation of the efficiency and effectiveness of ESMAP's work be carried out. The results of such evaluation should be presented to the CG.**

5. The CG concluded that:

- a. ESMAP has a comparative advantage in carrying out Regional and Intercountry studies. Regional studies should emerge from ESMAP country studies, but ESMAP should undertake regional studies only when the countries involved demonstrate a clear commitment to such work.**
- b. In view of the limited resources presently available to ESMAP, and the fact that its primary commitment is to developing countries, ESMAP should not become involved in activities in the Soviet Union and its Republics. However, ESMAP may consider undertaking a limited number of activities in Eastern and Central Europe depending on additional resources being made available for this purpose.**

- c. **ESMAP should have only a limited involvement in special programmes such as EPUES, FINESSE, etc. Such involvement should be consistent with ESMAP strategy work or be requested by the CG.**
 - d. **The CG should consider making available limited funds to enable ESMAP to respond to the needs of countries which are not considered to be core countries.**
- 6. The CG endorsed the general thrust and direction of the Energy Sector Management Assessment Program (ESMAP): PROPOSED STRATEGY AND WORK PLAN 1992-1993, dated November 20, 1991. ESMAP should further develop the methodology of its 5 step approach, stressing the importance of joint strategy development, including macro-economic linkages, environmental objectives, efficiency in supply and demand, and restructuring of policies and institutions in the energy sector.**
- 7. The CG drew attention to some of the major findings and recommendations of the TAG report. These were:**
- * **"The incremental evolutionary approach to change is not sufficient, and a significant reorientation of the Program should be instituted.**
 - * **To utilize scarce resources appropriately, there must be strong leadership within ESMAP that will resist the temptation to wander toward the less significant.**
 - * **To attract staff with reputations that will make ESMAP a sought out resource, ESMAP must earn the confidence of recipient and donor countries alike. Only then can ESMAP achieve the status to meet the challenge of the future."**
- 8. The CG underlined the importance of the TAG monitoring the ESMAP Work Plan and the CG Secretariat continuing to interact closely with members of the CG.**

Specifically, the CG requests that the TAG:

- a. **review the further elaboration of the ESMAP Work Plan of November 20 and its subsequent implementation;**

- b. continues to monitor ESMAP's progress towards the achievement of the program objectives agreed by the CG.
9. The CG requests a final version of the Work Plan, which clearly specifies the transition from existing to proposed new activities, both in substantive and budgetary terms. The CG noted that for the proposed Work Plan the ESMAP management requests a financial commitment from the donor community of US\$19 million in FY1992 and some US\$29 million for FY1993. Good management and high-quality staff can only be expected of ESMAP if continuity and adequacy of funding is assured.
10. A number of donors stated that their additional funding would be dependent upon an appropriately developed Work Plan, and timely and adequate progress in strengthening the management of the Program.
11. This report was prepared by:

Mr. Paul Hassing
Dr. David Jhirad
Dr. R.K. Pachauri
Mr. Terence Pike
and was unanimously approved by the Group.

Completed ESMAP Activities - October 1, 1991/September 30, 1992

By Sub-sector - Amounts in U.S. Dollars

	Country	Activity	Initiation Date	Date of Green Cover Report	Budget Financed by Donors	Commitments to date
E	Sao Tome & Principe	Hydro Feasibility Study	02/28/90	10/30/91	328,196	329,369
E	Angola	Rehabilitation/Technical Assistance in the Energy Sector	11/30/89	10/30/91	628,569	625,955
E	Tanzania	Industrial Energy Efficiency I	07/01/88	12/30/91	271,656	275,443
E	Cote d'Ivoire	Power Technical Assistance	06/04/90	01/30/92	1,022,801	1,022,801
E	Ghana	Industrial Energy Efficiency - Technical Assistance - I	03/30/89	06/09/92	321,031	293,158
E	China	Decentralized Power Companies I	01/31/89	11/30/91	269,000	268,114
E	Global	Assessment of Personal Computer Models for Energy Planners	02/22/90	10/30/91	100,000	98,417
E	Ecuador	Power System Efficiency	09/06/90	05/01/92	298,907	274,317
G	Mozambique	Gas Development & Environmental Impact	12/15/90	01/28/92	203,689	202,025
G	Cote d'Ivoire	Gas Sector Review	08/15/91	03/31/92	131,949	68,232
G	China	Gas Sector Restructuring Workshop	10/01/91	08/30/92	80,000	75,407
G	Hungary	Gas Imports Plan	06/01/91	05/26/92	120,000	118,953
G	Global/Indonesia	Gas Development Model	03/30/91	10/30/91	58,075	57,225
G	Morocco	Gas Development Plan	06/29/90	01/23/92	516,219	516,244
H	Ghana	Improved Charcoal Stoves	02/07/87	10/15/91	255,983	239,555
H	Rwanda	Improved Charcoal Stoves II	07/01/89	11/01/91	150,000	134,082

	Country	Activity	Initiation Date	Date of Green Cover Report	Budget Financed by Donors	Commitments to date
H	SADCC	Regional Capacity Building Program for Energy Survey & Policy Analysis-I & II	03/30/90	11/29/91	148,230	147,841
H	Mali	Household Energy Strategy Study	03/15/89	02/11/92	384,615	385,097
H	Uganda	Kikagati Mini-Hydro Rehabilitation	08/30/89	06/30/92	130,000	131,520
H	India	Windfarm Development Study	07/15/88	10/30/91	237,250	203,224
H	Global	Kerosene Stoves Review	08/01/89	10/30/91		***
H	Global	Biomass Supply Assessment	06/06/88	12/01/91		***
H	Global	Fuelwood Pricing	01/10/89	09/30/92		***
E	Malawi	Power Loss Reduction	05/16/90	09/30/92	237,406	180,315
G	Regional	Eastern European Gas Workshop	01/30/91	09/30/92	140,000	140,927
H	Cameroon	Household Energy Strategy Study	11/15/89	09/30/92	569,000	658,436
H	Guinea	Household Energy Strategy Study	05/01/89	09/30/92	272,200	265,358
H	Lao PDR	Urban Energy Demand Assessment Study	04/30/90	07/30/92	130,000	115,631
H	Philippines	Household Energy Strategy	06/01/90	09/30/92	377,097	375,341

An ESMAP activity normally starts with an Initiation Brief and is considered completed after a Green Cover Report is finalized. Publication of the final (Blue Cover) report, if any, may be delayed for some time and require small amounts additional to those reflected in commitment figures in this table.

* Subsector: E = Power and Energy Efficiency
G = Gas and Oil
H = Household and Renewables
R = Restructuring
S = Strategy and Sector Review

*** Activity conducted with World Bank's in kind resources.
n.a.: not applicable.

Completed ESMAP Activities - October 1, 1991/September 30, 1992

By Sub-sector - Amounts in U.S. Dollars

	Country	Activity	Initiation Date	Date of Green Cover Report	Budget Financed by Donors	Commitments to date
H	Bolivia	Household Energy Strategy	03/20/89	09/15/92	484,070	458,822
H	Global	Biomass Gasifier Monitoring	05/01/86	09/30/92	962,766	962,766
S	Central African Republic	Energy Assessment	07/15/90	11/15/91	300,000	145,233
S	Namibia	Energy Assessment	07/31/91	09/30/92	400,000	231,041
S	Nigeria	Energy Assessment	12/26/91	09/30/92	515,000	513,362
S	Poland	ESMAP Country Paper	n.a.	04/30/92	***	***
S	Tanzania	ESMAP Country Paper	n.a.	10/15/91	45,000	15,419
S	Morocco	ESMAP Country Paper	n.a.	04/30/92	45,000	9,154
S	Solomon Islands	Energy Assessment	10/01/90	10/31/91	245,450	228,002
S	Bolivia	ESMAP Country Paper	n.a.	04/15/92	45,000	25,379
S	Colombia	ESMAP Country Paper	n.a.	04/30/92	45,000	14,864
S	Guatemala	Energy Assessment II	01/01/92	09/30/92	100,000	87,671
	TOTAL				10,569,159	9,894,700

An ESMAP activity normally starts with an Initiation Brief and is considered completed after a Green Cover Report is finalized. Publication of the final (Blue Cover) report, if any, may be delayed for some time and require small amounts additional to those reflected in commitment figures in this table.

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*** Activity conducted with World Bank's in kind resources.
n.a.: not applicable.

ESMAP Activities in progress as of September 30, 1992
Amounts in U.S. Dollars

•	Country	Activity	Date of Initiation Brief	Budget Financed by Donors	Commitments to date
E	Tanzania	Power Loss Reduction & Distribution Expansion 1, 2 & 3	08/28/89	775,516	703,857
E	Senegal	Industrial Energy Conservation	06/01/87	3,976,329	3,976,329
E	Kenya	Power Loss Reduction	03/31/91	408,000	264,083
E	Africa	SADCC Power Interconnection II	10/01/91	643,176	513,084
E	Zimbabwe	Energy Efficiency TA	10/30/91	400,000	131,643
E	Cote d'Ivoire	Energy Efficiency in Buildings	05/04/90	724,833	668,890
E	Pakistan	Energy Efficiency TA - I	06/30/91	440,889	293,683
E	Nepal	Energy Efficiency & Fuel Substitution Study	06/30/91	410,000	307,152
E	Philippines	Energy Conservation	01/06/92	181,000	67,629
E	China	Energy Conservation & Pollution Control	02/29/92	142,098	5,764
E	China	Power Efficiency Pilot Study	03/31/92	414,029	52,044
E	Colombia	Power Sector Restructuring Program II	07/18/91	100,000	96,458
E	Colombia	Energy Efficiency Strategy	06/13/91	340,000	328,865
E	Morocco	Power System Efficiency	06/01/90	327,513	246,620
G	Mozambique	Gas Development Plan - II	06/01/92	100,000	0
G	Poland	Synthesis of Gas Studies	10/01/91	60,000	52,292

*	Country	Activity	Date of Initiation Brief	Budget Financed by Donors	Commitments to date
G	Global	Unified Approach to Gas Contracts	12/15/90	179,275	148,103
G	Global	Environmental Cost & Benefits of Natural Gas I	10/30/90	169,320	168,532
G	Global	Development of Potential National Small Uses of Gas	01/31/91	189,230	144,291
G	Global	Environmental Cost & Benefits of Natural Gas II	10/30/90	168,103	55,862
G	Bolivia	Natural Gas Sector Development Plan	11/30/90	534,961	411,355
G	Egypt	Gas Pricing Study	09/01/92	230,000	0
H	Chad	Household Egy Strategy Study	04/15/90	491,410	420,363
H	Rwanda	Improved Charcoal Kilns II	07/01/89	680,000	524,957
H	Africa	Biomass Mapping & Assessment	01/06/90	120,000	86,627
H	China	Training & Technical Assistance for Rural Energy Planning	01/20/89	526,000	495,703
H	Indonesia	Biomass Utilization/Rural Energy	07/01/89	187,135	146,511
H	Pakistan	Household Egy Strategy Study	06/30/89	3,227,403	2,500,000
H	Philippines	Non-Conventional Energy Assistance Program	08/01/90	284,000	113,613

An ESMAP activity normally starts with an Initiation Brief and is considered completed after finalization of a Green Cover Report. Publication of a final (Blue Cover) report, if any, may be delayed for some time and require small additional amounts to those reflected in commitment figures in this table.

- * Subsector: E = Power and Energy Efficiency
- G = Gas and Oil
- H = Household and Renewables
- R = Restructuring
- S = Strategy and Sector Review

*** Activity conducted with World Bank's in kind resources.
n.a.: not applicable.

ESMAP Activities in progress as of September 30, 1992
Amounts in U.S. Dollars

*	Country	Activity	Date of Initiation Brief	Budget Financed by Donors	Commitments to date
H	Vietnam	Energy Strategy/Rural Energy	02/28/92	300,000	223,607
H	India	Rural Energy Study Phase I	07/30/89	281,288	131,288
H	Global	Pre-Electrification	01/07/90	13,250	13,250
H	Ecuador	Private Sector Mini-Hydro	04/30/90	187,483	159,739
H	Jamaica	Improved Stoves	08/01/89	434,001	414,317
H	Brazil	Carajas Energy Options Study	02/05/91	750,000	0
H	Yemen	LPG Stoves Study	04/15/90	79,680	77,529
H	Yemen	Commercialization of Photovoltaic Systems	06/01/90	302,900	243,257
R	Angola	Power Sector Restructuring I	09/15/92	250,000	1,217
R	Poland	Implementation of Energy Sector Restructuring I	10/01/91	100,000	78,909
S	Angola	ESMAP Country Paper	n.a.	45,000	30,604
S	Zambia	ESMAP Country Paper	n.a.	45,000	3,000
S	Zimbabwe	ESMAP Country Paper	n.a.	45,000	21,625
S	Indonesia	Initiating Country Brief for Energy Environment Review I	6/14/92	45,000	35,902
S	Ecuador	Pricing Interfuel Substitution and Social Mitigation	05/01/92	280,000	219,417
S	Nicaragua	Energy Assesment	9/30/92	250,000	2,700
S	Armenia	Energy Assesment	9/30/92	***	***

*	Country	Activity	Date of Initiation Brief	Budget Financed by Donors	Commitments to date
S	Cameroun	Energy Assesment	9/30/92	250,000	0
TOTAL				20,088,822	14,580,671

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*** Activity conducted with World Bank's in kind resources.
n.a.: not applicable.

ESMAP Activities Launched between October 1, 1991 and September 30, 1992
Amounts in U.S. Dollars

*	Region/Country	Activity	Date of Initiation Brief	Budget Financed by Donors	Commitments to date
E	Africa	SADCC Power Interconnection II	10/01/91	630,000	513,084
E	Zimbabwe	Energy Efficiency Technical Assistance	10/30/91	400,000	131,643
R	Angola	Power Sector Restructuring - I	09/15/92	250,000	1,217
E	Philippines	Energy Conservation	01/06/92	181,000	67,629
E	China	Energy Conservation & Pollution Control	02/29/92	142,098	5,764
E	China	Power Efficiency Pilot Study	03/31/92	414,029	52,044
G	Mozambique	Gas Development Plan - II	06/01/92	100,000	0
G	Poland	Synthesis of Gas Studies	10/01/91	60,000	52,292
R	Poland	Implementation of Energy Sector Restructuring - I	10/01/91	100,000	78,909
G	Egypt	Gas Pricing Study	09/01/92	230,000	0
H	Vietnam	Energy Strategy-Rural Energy	02/28/92	300,000	223,607
S	Nigeria	Energy Assessment	12/26/91	515,000	501,896
S	Poland	ESMAP Country Paper	n.a.	***	***
S	Zambia	ESMAP Country Paper	n.a.	45,000	3,000

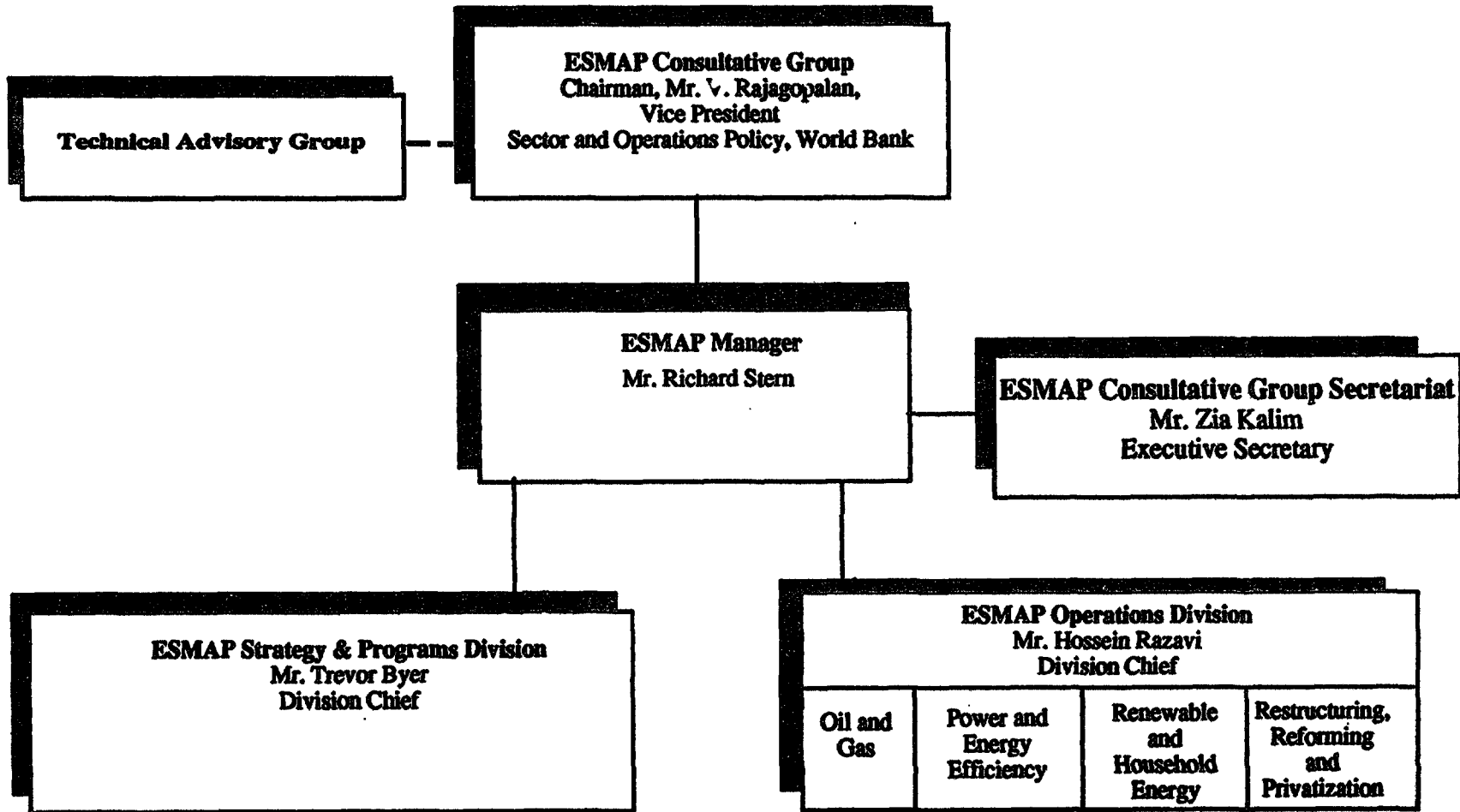
*	Region/Country	Activity	Date of Initiation Brief	Budget Financed by Donors	Commitments to date
S	Zimbabwe	ESMAP Country Paper	n.a.	45,000	21,625
S	Indonesia	Initiating Country Brief for Energy Environment Review I	6/14/92	45,000	35,902
S	Ecuador	Pricing Interfuel Substitution and Social Mitigation	5/01/92	280,000	219,417
S	Guatemala	Energy Assessment II	1/01/92	100,000	87,579
S	Nicaragua	Energy Assessment	9/30/92	250,000	2,700
S	Armenia	Energy Assessment	9/30/92	***	***
S	Cameroun	Energy Assessment I	9/30/92	250,000	0
				4,337,127	1,998,308

An ESMAP activity normally starts with an Initiation Brief and is considered completed after finalization of a Green Cover Report. Publication of the final (Blue Cover) report, if any, may be delayed for some time and require small amounts additional to those reflected in commitment figures in this table.

♦ Subsector: **E = Power and Energy Efficiency**
G = Gas and Oil
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R = Restructuring
S = Strategy and Sector Review

*** Activity conducted with World Bank's in kind resources.
n.a.: not applicable.

ESMAP Organization Chart
As of September 1, 1992



LIST OF REPORTS ON COMPLETED ACTIVITIES

<i>Region/Country</i>	<i>Activity/Report Title</i>	<i>Date</i>	<i>Number</i>
SUB-SAHARAN AFRICA (AFR)			
Africa Regional	Anglophone Africa Household Energy Workshop (English)	07/88	085/88
	Regional Power Seminar on Reducing Electric Power System Losses in Africa (English)	08/88	087/88
	Institutional Evaluation of EGL (English)	02/89	098/89
	Biomass Mapping Regional Workshops (English - Out of Print)	05/89	--
	Francophone Household Energy Workshop (French)	08/89	103/89
	Interafrican Electrical Engineering College: Proposals for Short- and Long-Term Development (English)	03/90	112/90
	Biomass Assessment and Mapping (English - Out of Print)	03/90	--
Angola	Energy Assessment (English and Portuguese)	05/89	4708-ANG
	Power Rehabilitation and Technical Assistance (English)	10/91	142/91
Benin	Energy Assessment (English and French)	06/85	5222-BEN
Botswana	Energy Assessment (English)	09/84	4998-BT
	Pump Electrification Prefeasibility Study (English)	01/86	047/86
	Review of Electricity Service Connection Policy (English)	07/87	071/87
	Tuli Block Farms Electrification Study (English)	07/87	072/87
	Household Energy Issues Study (English - Out of Print)	02/88	--
	Urban Household Energy Strategy Study (English)	05/91	132/91
Burkina Faso	Energy Assessment (English and French)	01/86	5730-BUR
	Technical Assistance Program (English)	03/86	052/86
	Urban Household Energy Strategy Study (English and French)	06/91	134/91
Burundi	Energy Assessment (English)	06/82	3778-BU
	Petroleum Supply Management (English)	01/84	012/84
	Status Report (English and French)	02/84	011/84
	Presentation of Energy Projects for the Fourth Five-Year Plan (1983-1987) (English and French)	05/85	036/85
	Improved Charcoal Cookstove Strategy (English and French)	09/85	042/85
	Peat Utilization Project (English)	11/85	046/85
	Energy Assessment (English and French)	01/92	9215-BU
Cape Verde	Energy Assessment (English and Portuguese)	08/84	5073-CV
	Household Energy Strategy Study (English)	02/90	110/90
Central African Republic	Energy Assessment (French)	08/92	9898-CAR
Comoros	Energy Assessment (English and French)	01/88	7104-COM
Congo	Energy Assessment (English)	01/88	6420-COB
	Power Development Plan (English and French)	03/90	106/90
Côte d'Ivoire	Energy Assessment (English and French)	04/85	5250-IVC
	Improved Biomass Utilization (English and French)	04/87	069/87
	Power System Efficiency Study (Out of Print)	12/87	--
	Power Sector Efficiency Study (French)	02/92	140/91
Ethiopia	Energy Assessment (English)	07/84	4741-ET
	Power System Efficiency Study (English)	10/85	045/85
	Agricultural Residue Briquetting Pilot Project (English)	12/86	062/86

<i>Region/Country</i>	<i>Activity/Report Title</i>	<i>Date</i>	<i>Number</i>
	Bagasse Study (English)	12/86	063/86
	Cooking Efficiency Project (English)	12/87	—
Gabon	Energy Assessment (English)	07/88	6915-GA
The Gambia	Energy Assessment (English)	11/83	4743-GM
	Solar Water Heating Retrofit Project (English)	02/85	030/85
	Solar Photovoltaic Applications (English)	03/85	032/85
	Petroleum Supply Management Assistance (English)	04/85	035/85
Ghana	Energy Assessment (English)	11/86	6234-GH
	Energy Rationalization in the Industrial Sector (English)	06/88	084/88
	Sawmill Residues Utilization Study (English)	11/88	074/87
Guinea	Energy Assessment (Out of Print)	11/86	6137-GUI
Guinea-Bissau	Energy Assessment (English and Portuguese)	08/84	5083-GUB
	Recommended Technical Assistance Projects (English & Portuguese)	04/85	033/85
	Management Options for the Electric Power and Water Supply Subsectors (English)	02/90	100/90
	Power and Water Institutional Restructuring (French)	04/91	118/91
Kenya	Energy Assessment (English)	05/82	3800-KE
	Power System Efficiency Study (English)	03/84	014/84
	Status Report (English)	05/84	016/84
	Coal Conversion Action Plan (English - Out of Print)	02/87	—
	Solar Water Heating Study (English)	02/87	066/87
	Peri-Urban Woodfuel Development (English)	10/87	076/87
	Power Master Plan (English - Out of Print)	11/87	—
Lesotho	Energy Assessment (English)	01/84	4676-LSO
Liberia	Energy Assessment (English)	12/84	5279-LBR
	Recommended Technical Assistance Projects (English)	06/85	038/85
	Power System Efficiency Study (English)	12/87	081/87
Madagascar	Energy Assessment (English)	01/87	5700-MAG
	Power System Efficiency Study (English and French)	12/87	075/87
Malawi	Energy Assessment (English)	08/82	3903-MAL
	Technical Assistance to Improve the Efficiency of Fuelwood Use in the Tobacco Industry (English)	11/83	009/83
	Status Report (English)	01/84	013/84
Mali	Energy Assessment (English and French)	11/91	8423-MLI
	Household Energy Strategy (English and French)	03/92	147/92
Islamic Republic of Mauritania	Energy Assessment (English and French)	04/85	5224-MAU
	Household Energy Strategy Study (English and French)	07/90	123/90
Mauritius	Energy Assessment (English)	12/81	3510-MAS
	Status Report (English)	10/83	008/83
	Power System Efficiency Audit (English)	05/87	070/87
	Bagasse Power Potential (English)	10/87	077/87
Mozambique	Energy Assessment (English)	01/87	6128-MOZ
	Household Electricity Utilization Study (English)	03/90	113/90
Niger	Energy Assessment (French)	05/84	4642-NIR
	Status Report (English and French)	02/86	051/86
	Improved Stoves Project (English and French)	12/87	080/87

<i>Region/Country</i>	<i>Activity/Report Title</i>	<i>Date</i>	<i>Number</i>
Nigeria	Household Energy Conservation and Substitution (English and French) Energy Assessment (English)	01/88 08/83	082/88 4440-UNI
Rwanda	Energy Assessment (English) Energy Assessment (English and French) Status Report (English and French) Improved Charcoal Cookstove Strategy (English and French) Improved Charcoal Production Techniques (English and French) Commercialization of Improved Charcoal Stoves and Carbonization Techniques Mid-Term Progress Report (English and French) SADCC Regional Sector: Regional Capacity-Building Program for Energy Surveys and Policy Analysis (English)	06/82 07/91 05/84 08/86 02/87 12/91 11/91	3779-RW 8017-RW 017/84 039/86 065/87 141/91 --
Senegal and Principe	Energy Assessment (English) Energy Assessment (English) Status Report (English and French) Industrial Energy Conservation Study (English) Preparatory Assistance for Donor Meeting (English and French) Urban Household Energy Strategy (English) Energy Assessment (English) Electric Power System Efficiency Study (English) Energy Assessment (English) Energy Assessment (English) Management Assistance to the Ministry of Energy and Mining Energy Assessment (English) Power System Efficiency Study (English) Status Report (English) Wood Energy/Forestry Feasibility (English - Out of Print) Energy Assessment (English) Energy Assessment (English) Peri-Urban Woodfuels Feasibility Study (English) Tobacco Curing Efficiency Study (English) Remote Sensing and Mapping of Woodlands (English) Industrial Energy Efficiency Technical Assistance (English - Out of Print)	10/85 07/83 10/84 05/85 04/86 02/89 01/84 08/84 10/87 12/85 05/83 07/83 06/84 11/84 07/87 02/87 11/84 08/88 05/89 06/90	5803-STP 4182-SE 025/84 037/85 056/86 096/89 4693-SEY 021/84 6597-SL 5796-SO 003/83 4511-SU 018/84 026/84 073/87 6262-SW 4969-TA 086/88 102/89 --
Sierra Leone Somalia Sudan			
Switzerland Tanzania			
Togo	Energy Assessment (English) Wood Recovery in the Nangboto Lake (English and French) Power Efficiency Improvement (English and French) Energy Assessment (English) Status Report (English) Institutional Review of the Energy Sector (English) Energy Efficiency in Tobacco Curing Industry (English) Fuelwood/Forestry Feasibility Study (English) Power System Efficiency Study (English) Energy Efficiency Improvement in the Brick and Tile Industry (English) Tobacco Curing Pilot Project (English - Out of Print)	08/90 06/85 04/86 12/87 07/83 08/84 01/85 02/86 03/86 12/88 02/89 03/89	122/90 5221-TO 055/86 078/87 4453-UG 020/84 029/85 049/86 053/86 092/88 097/89 (UNDP report)
Uganda			

<i>Region/Country</i>	<i>Activity/Report Title</i>	<i>Date</i>	<i>Number</i>
Zaire	Energy Assessment (English)	05/86	5837-ZR
Zambia	Energy Assessment (English)	01/83	4110-ZA
	Status Report (English)	08/85	039/85
	Energy Sector Institutional Review (English)	11/86	060/86
Zambia	Power Subsector Efficiency Study (English)	02/89	093/88
	Energy Strategy Study (English)	02/89	094/88
	Urban Household Energy Strategy Study (English)	08/90	121/90
Zimbabwe	Energy Assessment (English)	06/82	3765-ZIM
	Power System Efficiency Study (English)	06/83	005/83
	Status Report (English)	08/84	019/84
	Power Sector Management Assistance Project (English)	04/85	034/85
	Petroleum Management Assistance (English)	12/89	109/89
	Power Sector Management Institution Building (English - Out of Print)	09/89	—
	Charcoal Utilization Prefeasibility Study (English)	06/90	119/90
	Integrated Energy Strategy Evaluation (English)	01/92	8768-ZIM

EAST ASIA AND PACIFIC (EAP)

Asia Regional	Pacific Household and Rural Energy Seminar (English)	11/90	—
China	County-Level Rural Energy Assessments (English)	05/89	101/89
	Fuelwood Forestry Preinvestment Study (English)	12/89	105/89
Fiji	Energy Assessment (English)	06/83	4462-FIJ
Indonesia	Energy Assessment (English)	11/81	3543-IND
	Status Report (English)	09/84	022/84
	Power Generation Efficiency Study (English)	02/86	050/86
	Energy Efficiency in the Brick, Tile and Lime Industries (English)	04/87	067/87
	Diesel Generating Plant Efficiency Study (English)	12/88	095/88
	Urban Household Energy Strategy Study (English)	02/90	107/90
	Biomass Gasifier Preinvestment Study Vols. I & II (English)	12/90	124/90
Malaysia	Sabah Power System Efficiency Study (English)	03/87	068/87
	Gas Utilization Study (English)	09/91	9645-MA
Myanmar	Energy Assessment (English)	06/85	5416-BA
Papua New Guinea	Energy Assessment (English)	06/82	3882-PNG
	Status Report (English)	07/83	006/83
	Energy Strategy Paper (English - Out of Print)	—	—
	Institutional Review in the Energy Sector (English)	10/84	023/84
	Power Tariff Study (English)	10/84	024/84
Solomon Islands	Energy Assessment (English)	06/83	4404-SOL
	Issues and Options in the Energy Sector (English)	01/92	979-SOL
South Pacific	Petroleum Transport in the South Pacific (English-Out of Print)	05/86	—

<i>Region/Country</i>	<i>Activity/Report Title</i>	<i>Date</i>	<i>Number</i>
Thailand	Energy Assessment (English)	09/85	5793-TH
	Rural Energy Issues and Options (English - Out of Print)	09/85	044/85
	Accelerated Dissemination of Improved Stoves and Charcoal Kilns (English - Out of Print)	09/87	079/87
	Northeast Region Village Forestry and Woodfuels Preinvestment Study (English)	02/88	083/88
	Impact of Lower Oil Prices (English)	08/88	--
	Coal Development and Utilization Study (English)	10/89	--
Tonga	Energy Assessment (English)	06/85	5498-TON
Vanuatu	Energy Assessment (English)	06/85	5577-VA
Western Samoa	Energy Assessment (English)	06/85	5497-WSO

SOUTH ASIA (SAS)

Bangladesh	Energy Assessment (English)	10/82	3873-BD
	Priority Investment Program	05/83	002/83
	Status Report (English)	04/84	015/84
	Power System Efficiency Study (English)	02/85	031/85
	Small Scale Uses of Gas Prefeasibility Study (English - (Out of Print))	12/88	--
India	Opportunities for Commercialization of Nonconventional Energy Systems (English)	11/88	091/88
	Maharashtra Bagasse Energy Efficiency Project (English)	05/91	120/91
	Mini-Hydro Development on Irrigation Dams and Canal Drops Vols. I, II and III (English)	07/91	139/91
Nepal	Energy Assessment (English)	08/83	4474-NEP
	Status Report (English)	01/85	028/84
Pakistan	Household Energy Assessment (English - Out of Print)	05/88	--
	Assessment of Photovoltaic Programs, Applications, and Markets (English)	10/89	103/89
Sri Lanka	Energy Assessment (English)	05/82	3792-CE
	Power System Loss Reduction Study (English)	07/83	007/83
	Status Report (English)	01/84	010/84
	Industrial Energy Conservation Study (English)	03/86	054/86

EUROPE AND CENTRAL ASIA (ECA)

Eastern Europe	The Future of Natural Gas in Eastern Europe (English)	08/92	149/92
Portugal	Energy Assessment (English)	04/84	4824-PO
Turkey	Energy Assessment (English)	03/83	3877-TU

MIDDLE EAST AND NORTH AFRICA (MNA)

Morocco	Energy Assessment (English and French)	03/84	4157-MOR
	Status Report (English and French)	01/86	048/86

<i>Region/Country</i>	<i>Activity/Report Title</i>	<i>Date</i>	<i>Number</i>
Syria	Energy Assessment (English)	05/86	5822-SYR
	Electric Power Efficiency Study (English)	09/88	089/88
	Energy Efficiency Improvement in the Cement Sector (English)	04/89	099/89
	Energy Efficiency Improvement in the Fertilizer Sector(English)	06/90	115/90
Tunisia	Fuel Substitution (English and French)	03/90	--
	Power Efficiency Study (English and French)	02/92	136/91
	Energy Management Strategy in the Residential and Tertiary Sectors (English)	04/92	146/92
Yemen	Energy Assessment (English)	12/84	4892-YAR
	Energy Investment Priorities (English - Out of Print)	02/87	6376-YAR
	Household Energy Strategy Study Phase I (English)	03/91	126/91
LATIN AMERICA AND THE CARIBBEAN (LAC)			
LAC Regional	Regional Seminar on Electric Power System Loss Reduction in the Caribbean (English)	07/89	--
Bolivia	Energy Assessment (English)	04/83	4213-BO
	National Energy Plan (English)	12/87	--
	National Energy Plan (Spanish)	08/91	131/91
	La Paz Private Power Technical Assistance (English)	11/90	111/90
	Natural Gas Distribution: Economics and Regulation (English)	03/92	125/92
	Prefeasibility Evaluation Rural Electrification and Demand Assessment (English and Spanish)	04/91	129/91
	Private Power Generation and Transmission (English)	01/92	137/91
Chile	Energy Sector Review (English - Out of Print)	08/88	7129-CH
Colombia	Energy Strategy Paper (English)	12/86	--
Costa Rica	Energy Assessment (English and Spanish)	01/84	4655-CR
	Recommended Technical Assistance Projects (English)	11/84	027/84
	Forest Residues Utilization Study (English and Spanish)	02/90	108/90
Dominican Republic	Energy Assessment (English)	05/91	8234-DO
Ecuador	Energy Assessment (Spanish)	12/85	5865-EC
	Energy Strategy Phase I (Spanish)	07/88	--
	Energy Strategy (English)	04/91	--
Haiti	Energy Assessment (English and French)	06/82	3672-HA
	Status Report (English and French)	08/85	041/85
	Household Energy Strategy (English and French)	12/91	143/91
Honduras	Energy Assessment (English)	08/87	6476-HO
	Petroleum Supply Management (English)	03/91	128/91
Jamaica	Energy Assessment (English)	04/85	5466-JM
	Petroleum Procurement, Refining, and Distribution Study (English)	11/86	061/86
	Energy Efficiency Building Code Phase I (English-Out of Print)	03/88	--
	Energy Efficiency Standards and Labels Phase I (English - Out of Print)	03/88	--
	Management Information System Phase I (English - Out of Print)	03/88	--
	Charcoal Production Project (English)	09/88	090/88

<i>Region/Country</i>	<i>Activity/Report Title</i>	<i>Date</i>	<i>Number</i>
Jamaica	Energy Sector and Investment Planning Study (English) (3 volumes)	08/92	135/92FIDCO
	Sawmill Residues Utilization Study (English)	09/88	088/88
Mexico	Improved Charcoal Production Within Forest Management for the State of Veracruz (English and Spanish)	08/91	138/91
Panama	Power System Efficiency Study (English - Out of Print)	06/83	004/83
Paraguay	Energy Assessment (English)	10/84	5145-PA
	Recommended Technical Assistance Projects (English- (Out of Print)	09/85	-
	Status Report (English and Spanish)	09/85	043/85
Peru	Energy Assessment (English)	01/84	4677-PE
	Status Report (English - Out of Print)	08/85	040/85
	Proposal for a Stove Dissemination Program in the Sierra (English and Spanish)	02/87	064/87
	Energy Strategy (Spanish)	12/90	-
Saint Lucia	Energy Assessment (English)	09/84	5111-SLU
St. Vincent and the Grenadines	Energy Assessment (English)	09/84	5103-STV
Trinidad and Tobago	Energy Assessment (English - Out of Print)	12/85	5930-TR

GLOBAL

Energy End Use Efficiency: Research and Strategy (English - Out of Print)	11/89	-
Guidelines for Utility Customer Management and Metering (English and Spanish)	07/91	-
Women and Energy—A Resource Guide The International Network: Policies and Experience (English)	04/90	-
Assessment of Personal Computer Models for Energy Planning in Developing Countries (English)	10/91	-

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