

Energy and Sustainable Development:

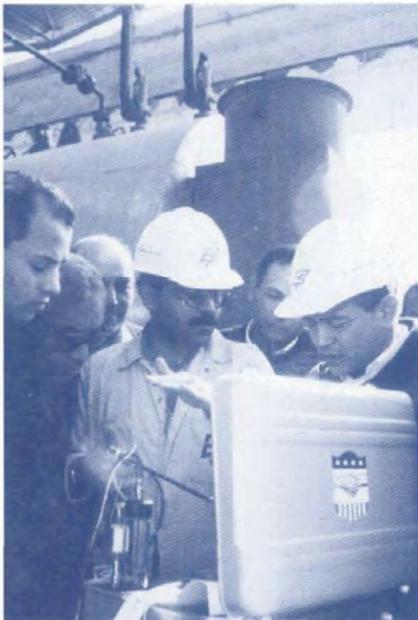


The USAID Role



Foreword

Energy and Sustainable Development: The USAID Role



Courtesy of Hagler Bailly

USAID representatives discuss a project with private sector partners.

Exploding demand for energy services in developing countries and countries transitioning from communist to market economies affects American national security, our environment, and our international competitiveness. For these reasons, the energy problems and issues of these countries are a focus of the U.S. Agency for International Development (USAID), the foreign assistance arm of the U.S. government. This publication describes the energy challenges that face developing countries, USAID's strategy to help them meet these challenges, and results of the Agency's efforts.

At the heart of USAID's strategy is the reform of legislative and regulatory policies and institutions to allow private sector participation in electric power development and to open markets for renewables, energy efficiency, and clean-energy technologies. USAID assistance has been crucial in more than 24 countries in the reform of the electric sector, improvements in energy efficiency and availability, stimulated investments in renewable energy projects, and improved economic performance in the power sector. USAID's leveraging of funds from multilateral and commercial banks has resulted in the Agency being recognized as a catalyst in the private power "revolution" in developing countries and economies in transition.



Energy brings countless benefits to human life. Energy facilitates heating and cooling, illumination, communications, health, food, education, industrial production, and transportation. Unfortunately, these benefits have yet to reach more than 2 billion people around the world. To achieve and maintain social and economic progress, developing countries and economies in transition need to expand their energy supplies without harming the environment. Equitable, sustainable development depends on widespread access to appropriate energy services. According to current estimates, a yearly investment of more than \$100 billion will be required over the next decade for new or rehabilitated electricity generation capacity in developing countries.

USAID spearheads the U.S. Government's efforts to help developing countries and economies in transition design effective new strategies to tap private capital and talent to meet growing energy demand. Today, USAID's field-based programs help foreign governments construct market-oriented policies and institutions to support private energy development; introduce competition; unbundle and privatize vertically integrated, state-owned utilities; and create independent regulatory authorities and access to appropriate technology to operate and manage energy systems and meet widespread demand. These USAID programs recognize that the only sustainable way to improve energy supply is to ensure that energy investments are market-based. USAID believes governments' role is to concentrate on ensuring that the "playing field" for different investors in energy is level and that markets are open to sustainable technologies that contribute positively to local, regional, or global environmental problems.

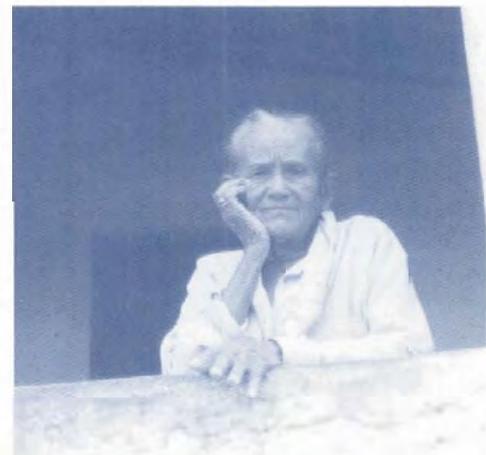
USAID programs also recognize that developing countries expanding limited energy infrastructures are particularly well positioned to make use of sustainable technologies that can help them increase their energy supplies without degrading the environment. These countries can choose to pursue less carbon-intensive economic development and "leapfrog" over the polluting carbon-rich industrialization phase that developed countries experienced. Renewable energy, energy efficiency, and clean-energy technologies are decreasing in cost, making them viable and attractive options to meet the developing world's growing energy demands.

USAID's energy strategy is two-fold:

- foster energy sector reform to stimulate private investment
- catalyze greater use of renewables, energy efficiency, and clean-energy technologies

In pursuit of this strategy, USAID collaborates with international financial institutions, U.S. and host-country agencies, nongovernmental organizations, and private entities to leverage resources and encourage private sector participation, financing, and partnerships.

USAID programs recognize that the only sustainable way to improve energy supply is to ensure that energy investments are market-based.



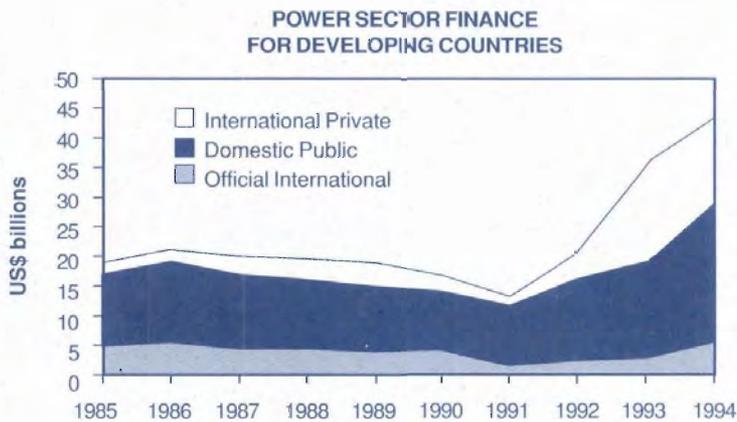
Courtesy of Melissa Ryan

Women are particularly affected by lack of access to electricity because they spend a greater percentage of their time in dwellings where smoke from traditional fuels such as kerosene, candles, or fires adversely impact their health.

Key to Sustainable Development: Energy Sector Reform and Private Investment

Private participation in the energy sector accelerates economic growth by alleviating power shortages and other energy-related problems that restrict growth. In addition, private power developers are inclined to be more efficient than their public sector counterparts because they have greater incentives to maximize profits and eliminate waste.

USAID's energy programs assist developing and transition countries to establish the policy frameworks and institutional capacity necessary for the operation of financially viable, competitive power markets that can attract private capital. Mobilizing private capital is difficult in countries that do not satisfy investors' criteria for a stable economy, market transparency, and a well-founded legal framework that safeguards property rights. Current investment trends illustrate the success of targeting private capital for energy development.



Source: Resource Dynamics Corp. 1996 for U.S. Department of Energy

This growing demand represents a robust business opportunity for the U.S. private sector that can also lessen the capital burdens on governments, freeing up government resources to conduct social programs in health, agricultural reform, social security, and other areas where private sector involvement is less likely in the short term.

Key USAID actions to assist countries to better organize energy markets include developing the formulas for competitive auctions of state-held generation, transmission, and distribution services; eliminating subsidies in

the energy marketplace; restructuring tax laws; creating non-discriminatory private power purchase frameworks; developing stable, transparent regulatory frameworks and independent regulatory agencies; and lifting import restrictions.

The growing demand for energy represents a robust business opportunity for the U.S. private sector that can also lessen the capital burdens on governments.



Courtesy of Geothermal Energy Association

USAID-sponsored consultations with the Government of Indonesia on the private development of Indonesia's geothermal resources laid the groundwork for the development of Unocal's Gunung Salak Power Plant.

USAID'S UTILITY PARTNERS

USAID and the U.S. Energy Association are working in partnership with major utilities throughout the globe through the Utility Partnership Program (please see page 8.) This program pairs utilities in developing and transition countries with U.S. utilities. Some participants in the program include the following:

U.S. Utilities

Conectiv, Wilmington (DE, NJ)
 CSW Corporation, Dallas, TX (TX, OK)
 D.C. Reg. Comm & Colorado Reg Comm (CO)
 DQE (Duquesne Light Company) (PA)
 Florida Public Service Comm., Iowa Utilities Board, Oregon Public Utility Comm (FL, IA, OR)
 GPU (General Public Utilities) (NJ, PA)
 Georgia Power Company, Atlanta (GA)
 Gulf Power Company, Pensacola (FL)
 PacifiCorp, Portland (OR)
 Pacific Enterprises, Los Angeles, (CA)
 PGE (Portland General Electric) (OR)
 PP&L (Pennsylvania Power & Light)
 Allentown (PA)
 PSE/Niagara Mohawk, Syracuse (NY)
 Sacramento Municipal Utility District (CA)
 Southern Electric International, Atlanta (GA)

International Utilities

Egyptian Electric Authority, Cairo, Egypt
 Manila Electric Co., Philippines
 Shandong Electric Power Company, Jinan, China
 Orissa Electricity Regulatory Commission, Bhubaneshwar, India
 Karnataka Electricity Board & Karnataka Power Corporation Limited, Bangalore, India
 ANEEL (federal regulatory agency), Brasilia, Brazil
 SENELEC, Dakar, Senegal
 National Power Corp., Manila, Philippines
 Calcutta Electric Supply Co., India
 Visayan Electric Company, Cebu City, Philippines
 PT Perusahaan Gas Negara (PGN), Jakarta, Indonesia
 PLN Java-Bali Power Company I, Jakarta, Indonesia
 Andhra Pradesh State Electricity Board, Hyderabad, India
 Bombay Suburban Electricity Supply, India
 Cagayan d'Oro Electric Power & Light Co., Philippines
 PT PLN Persero (PLN, Indonesia), Jakarta, Indonesia
 Bombay Suburban Electricity Supply, India



New electricity production is transported across national borders to meet the needs of growing populations throughout the developing world.

Supporting the Transition to Market Economics. The transition to market economies in Eastern Europe and New Independent States has been supported by the USAID energy efficiency program through the creation of a new energy efficiency services industry. More than 200 new energy service companies and consultants have grown out of the USAID program. By providing U.S. experts and energy efficiency equipment for industrial and building energy audits, local emerging private energy efficiency/engineering companies and consultants have gained financial, management, and marketing experience as well as access to U.S. equipment manufacturers. To expand the experts and consultants' professional and business development, USAID has supported the development of 10 local chapters of the U.S. Association of Energy Engineers in the region.

New Opportunities: Renewable Energy, Energy Efficiency, and Clean Energy.

Revising Energy Sector Regulations.

USAID is working with the Philippines Department of Energy (PDOE) to develop economic models that will enable policy makers to compare the financial, economic, environmental, and social impacts of natural gas, coal, and renewable energy technologies. Using this analysis, USAID will assist the PDOE in revising regulations to "level the playing field" among the various power generation technologies.

Solar Electricity for Rural Development.

Enersol Associates works to improve the quality of life in rural areas of the developing world by helping local entrepreneurs establish and manage energy service companies which design, install, and finance solar power systems for use by households and small businesses. In the Dominican Republic alone, more than 4,000 rural households benefit from solar electricity as a direct result of Enersol's pioneering efforts. In Honduras, a network of small entrepreneurs, trained and assisted by Enersol, has installed 1,000 solar systems in rural homes and businesses. USAID provided capital to support the growth of Enersol's operations in the Dominican Republic and the expansion of the organization's activities to Honduras. The Rockefeller Foundation and a private investment fund provide capital to support the finance and delivery enterprises at the heart of the Enersol operation.

While market discipline often leads to improved environmental performance as economies shift from inefficient public sector management to private delivery mechanisms, it is not clear whether market forces will always reward the environmentally preferable choice. In the absence of appropriate regulatory or price incentives, market forces may reward investments that maximize short-run profits, rather than those that optimize life-cycle costs and benefits. Investments in energy efficiency, renewable energy, and clean-energy technology all stand to suffer when short-run marginal costs determine investment decisions. To this end, USAID energy programs are designed to play a supporting role in the advancement of national, state, and local policy reforms that limit environmental degradation from existing electricity production and use and stimulate investment in sustainable clean technologies. In a growing number of developing and transition economies, geothermal, biomass, solar, wind, and hydrologic technologies can be both economically viable and help reduce environmental impacts. USAID works with the private sector to accelerate the penetration of these technologies into host-country marketplaces.

Key USAID actions include supporting governments in developing regulatory agencies; instituting energy pricing that accounts for environmental externalities; eliminating subsidies for the extraction, transporting, or retail marketing of conventional fuels; instituting tariff structures that send the appropriate price signals; using environmental criteria when evaluating bids; creating Demand-Side Management (DSM) incentives and minimum purchase contracts for renewables; and adopting strict energy codes and standards.



Enersol's founder and Executive Director, Richard Hansen (center), conducts a solar energy training course for entrepreneurs in the Dominican Republic.

Renewable Energy

Renewable energy technologies frequently represent the least-cost option for satisfying human needs. They can pump water for domestic and community uses as well as irrigation and stock watering. They can power water purification systems, television sets and radios and light schools and community centers. Furthermore, public health clinics can be lit, diagnostic equipment can be used, vaccines can be refrigerated, and utensils can be sterilized. Renewable energy can also power new commercial enterprises or expand old ones. This is all done using indigenous resources that do not contribute to global climate change.

USAID programs in renewable energy are directed at overcoming market and institutional barriers to the penetration of renewable energy systems. USAID activities in the renewables area can be divided into four categories: supporting the adoption and implementation of policy or regulatory changes that clarify or establish rights and incentives for renewables, fostering the mobilization of business entities to pursue renewable energy, catalyze increased financial commitments to renewables, and stimulate the establishment or strengthening of host-country non-profit institutions for the explicit purpose of promoting renewables.

Energy Efficiency

Improving energy efficiency is recognized as one of the most cost-effective means of addressing environment, energy, and economic problems facing developing and transition economies. It is also often the easiest and least expensive way to avoid the need for new power plants to reduce pollutants, and to lower a nation's economic burden for energy imports. USAID supports a wide range of activities to promote innovation in energy efficiency technology and in the policy, financing, and institutional responses to the energy efficiency challenge. Examples of USAID's work include fostering of local private energy service companies and nongovernmental organization energy efficiency centers in Eastern Europe and the New Independent States, the development of efficiency standards and codes, capacity building in the area of DSM and motor efficiency, technical assistance in the definition of international financial institution credit windows to support efficiency projects, financial support for pre-investment studies and pilot projects, and design assistance on demand aggregation programs.

Clean Energy

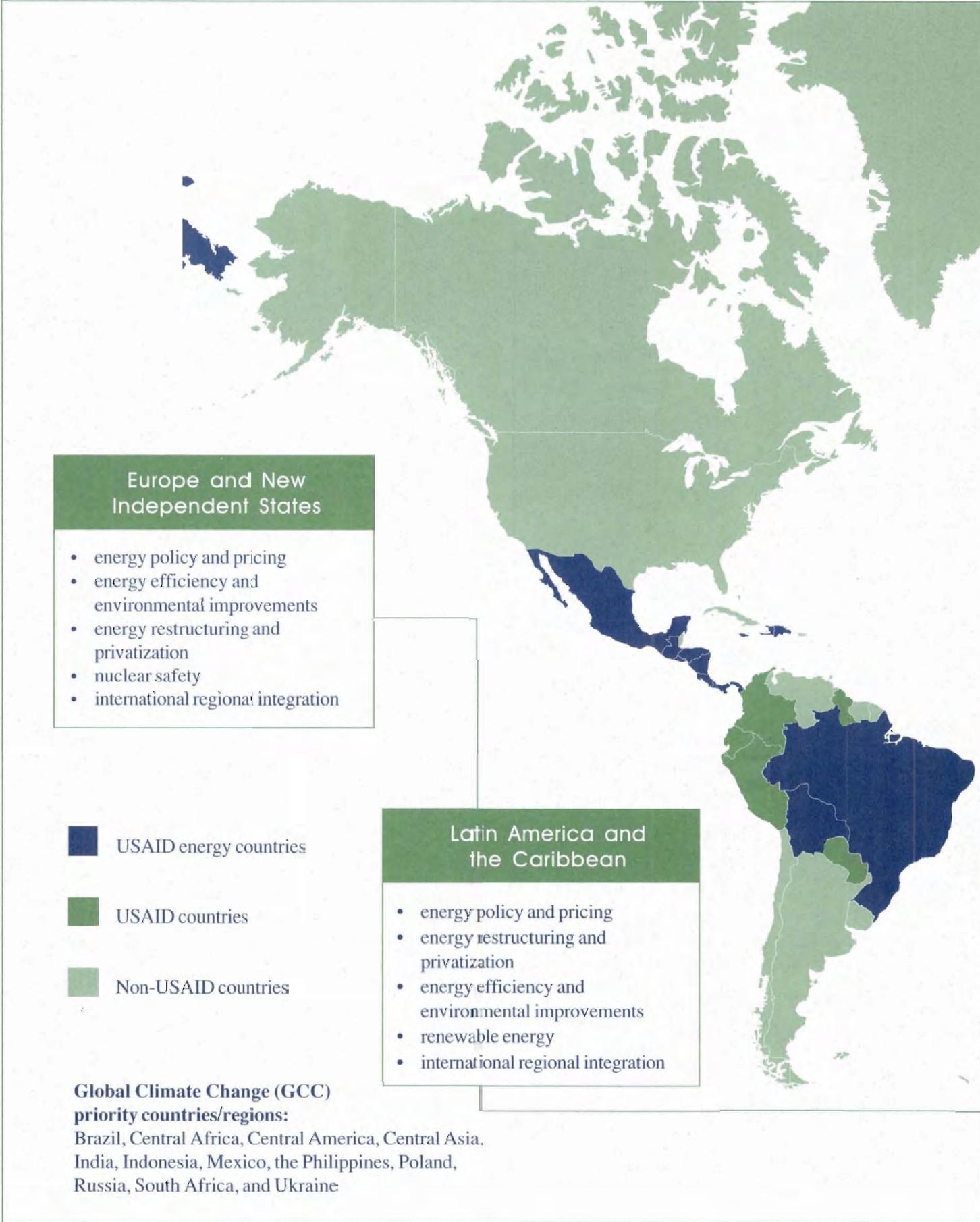
Fossil fuels will continue to be the main source of energy worldwide for the next century. USAID is working to facilitate developing countries' and transition economies' adoption of cleaner, sustainable, and innovative fossil-fuel technologies. In the area of clean energy, USAID promotes the development of technical solutions coupled with appropriate policy frameworks, economic incentives, investment capital, private sector partnerships, and capacity building. USAID fosters private investment in innovative clean-energy projects by facilitating the creation of new credit windows and assisting with regulatory reform.

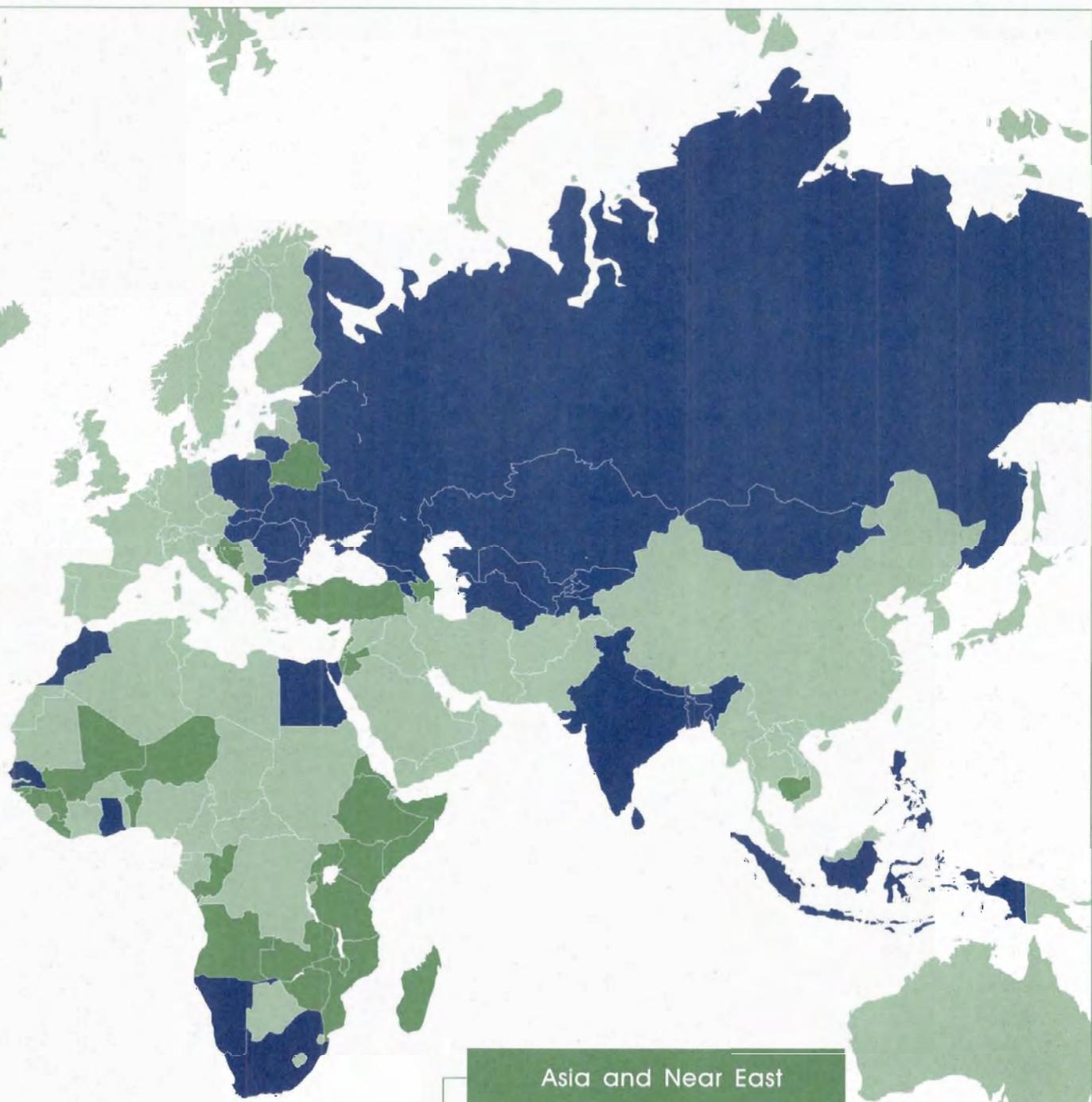


USAID energy efficiency retrofits will reduce the opacity in the plume from the Manzanillo Power Plant and save the plant owners more than \$1 million in energy costs.

Cleaning Up Manzanillo Power Station.

USAID has worked with the Mexican Government on reducing the emissions from the Manzanillo Power Station (MPS) in Mexico. Manzanillo is a 1,900 MW heavy-oil fired power station on Mexico's West Coast in the State of Colimas. It provides baseload capacity for the industries of Guadalajara. A lack of environmental controls and the need to use low-grade fuel oil causes the power station to exhaust highly visible plumes that adversely affect one of Mexico's prime tourist locations. A U.S.-developed technology to reduce particle matter emissions and increase boiler efficiency in oil-fired power plants has been installed in one of the MPS units for demonstration and testing. The results have been very favorable, and the Mexican national utility has recently decided to equip all the power units at MPS with the Reduced Emissions and Advanced Combustion Hardware (REACH). In addition, the Mexicans will install the REACH technology in two other power plants.





Africa

- energy policy and pricing
- energy restructuring and privatization
- energy efficiency and environmental improvements
- renewable energy

Asia and Near East

- energy policy and pricing
- energy restructuring and privatization
- energy efficiency and environmental improvements
- renewable energy
- transportation efficiency

Building Success: Energy Partnerships

US-Asia Environmental Partnership (US-AEP). *Founded in 1992 as a Presidential Initiative, the US-AEP operates under the leadership of USAID with the cooperation of a broad range of partners in government, industry, and nongovernmental institutions. US-AEP focuses its resources in the areas of industry, infrastructure, and the building of a framework of policies, constituencies, and public awareness. US-AEP offers exporters of environmental technology (including renewables, energy efficiency, and clean energy) access to trade leads, grants, exchanges and fellowships, market research, and business counseling services.*

Utility Partnership Program. *USAID is funding a utility partnership program that provides a mechanism for establishing direct relationships between U.S. companies and their international counterparts to share experiences in market-based energy production, transmission, and distribution. Over the last seven years, in conjunction with the U.S. Energy Association, the program has paired more than 35 utilities in developing and transition countries with U.S. utilities. Each utility pair has a specific plan for implementing activities, such as improved financial management systems, DSM, increased transmission and distribution efficiency, or increased thermal efficiency. The program has improved operations, mitigated the impact of power generation on the environment, stimulated sales of U.S. technologies, and opened the door to emerging markets for U.S. utilities.*

Sustainable Cities Initiative (SCI). *SCI partnerships promote municipal, nongovernmental, and private sector investments in energy efficiency and clean-energy technology. An example of the SCI's success is in Ahmedabad, India, where USAID and the U.S. Environmental Protection Agency have created an alliance involving the Ahmedabad Municipal Corporation (AMC); the Ahmedabad Electricity Company (AEC); and Arvind Mills, one of the largest denim producers in the world. The partnership has resulted in AMC investing municipal funds to retrofit water pumps and streetlights to reduce energy costs. In addition, AEC invested \$700,000 in energy efficiency equipment in 1997 alone.*

Private sector partnerships that engage the vast resources – human, technological, and financial – of the business community are critical in USAID's success in the energy sector. USAID supports partnerships between U.S. and foreign entities that advance understanding of modern commercial utility management practices in a market economy, facilitate the adoption of sustainable energy technologies, and ensure the continued impact of USAID programs once support ends. The partnerships provide a mechanism for establishing direct relationships between U.S. companies, professionals, and government officials and their host-country counterparts to share experience in market-based energy production, transmission, and distribution and also leverage financing necessary to support sustainable energy projects.

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Training and Information Dissemination

Development decisions have serious economic and environmental implications. In many cases, however, developing countries lack the human capacity to assess the environmental or long-term economic effects of their decisions. USAID helps build the human capacity in both public and private institutions through partnerships and a combination of training, technical assistance, and public awareness programs.

The transition from traditional energy technologies to clean-energy technologies is most

successful when host-country decision-makers and technicians can understand, adapt, and use locally produced clean-energy technologies and policies. USAID works with host-country agencies to support training programs, study tours, information sharing, and cross-border partnerships for decision-makers, scientists, and technicians.

Consumers also need to be aware of new technologies for market demand to exist. But the cost of obtaining information can be high, and governments often need to intervene to enhance information dissemination. USAID trains appropriate in-country agents in policy options and actions for enhancing the flow of information. USAID also supports demonstration projects, advertising campaigns, and certification of relevant new technologies, and nongovernment energy business centers.

An example of USAID's training and information dissemination work is the nongovernmental energy efficiency centers that USAID and the U.S. Department of Energy helped establish in Poland, the Czech Republic, Bulgaria, Russia, and Ukraine. These centers have made information available to investors, companies, and governments as well as allowed for the exchange of experience among them.



Courtesy of Melissa Ryan

Community residents in northeastern Brazil gather to discuss solar-powered, community-based micro-utilities. USAID supports training and capacity building by nongovernmental organizations that bring together residents of rural communities to learn about sustainable energy technologies.

Leveraging Public and Private Sector Financing

Significant market barriers often block the dissemination of environmentally sound energy technologies. They have high initial capital costs compared to operating costs, are small in scale compared with traditional energy projects, and are unfamiliar to commercial financiers. USAID works in partnership with the World Bank, the European Bank for Reconstruction and Development, and other international financial institutions to mobilize private investments in sustainable energy development.

Key USAID actions to eliminate barriers to leveraging private capital for environmentally sustainable, economically sound energy projects include loan guarantees, interest rate buy-downs, prefeasibility and feasibility study funding, and the provision of venture capital.

Asia Sustainable Energy Initiative. This USAID-funded project assists Asian countries in their efforts to mitigate climate change impacts originating in the energy sector. Under the Initiative, the Institute for International Education (IIE) organized training sessions for professionals from India, Indonesia, and the Philippines. The sessions explored the technical and institutional requirements necessary for the implementation of energy efficiency labeling programs in the respective countries and outlined labeling's role in promoting the manufacture, marketing, and purchasing of energy efficient electrical equipment such as refrigerators, residential air conditioners, lighting systems, and motors. As a result of IIE's training activity, it is expected that product standards, testing, and labeling programs on electric equipment will be established and/or improved in the participating countries, with potentially significant impacts over the longer term for mitigating energy demand growth rates and reducing GDP energy intensity.

Environmental Enterprises Assistance Fund (EEAF). USAID provides substantial support to the EEAF, which finances innovative environmentally sound enterprises. EEAF has now established sufficient capital sources to flourish as an independent investment group. EEAF has successfully raised a total of \$13 million for debt or equity investments in projects or businesses that have a clear environmental focus. The private sector arm of the World Bank has selected EEAF as one of four fund managers to operate its Renewable Energy and Energy Efficiency Fund. EEAF and its partners expect to raise more than \$150 million for the fund from public and private sources in 1998/99.

Special Initiatives

Global Climate Change

In June 1997, President Clinton announced that the U.S. would provide at least one billion dollars over the next five years to collaborate with developing nations and countries in transition to reduce the threat of climate change. That announcement signaled a renewed U.S.



Government commitment to facilitate technology transfer and collaborate with developing and transition countries to achieve the goals of the U.N. Framework Convention on Climate Change (FCCC).

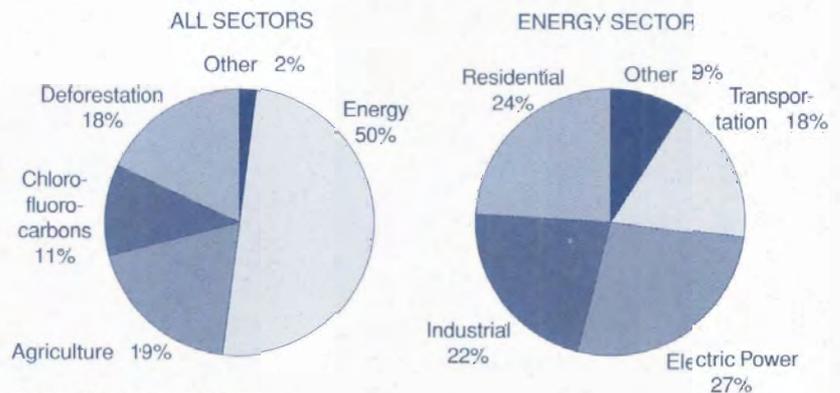
USAID has been given the lead on behalf of the Federal Government in implementing the President's commitment. The USAID Climate Change Initiative, which is being launched this year, details how the Agency will help make the President's commitment a reality. The underlying principle of the initiative is that efforts to reduce greenhouse gas (GHG) emissions and vulnerability to climate change

will be critical if USAID is to promote development that is sustainable. USAID believes that economic development will be enhanced, not compromised, by efforts to reduce GHG emissions.

Eliminating GHG Emissions. USAID is working with local utilities in India to demonstrate strategies that result in reduced or eliminated GHG emissions. One demonstration program with the National Thermal Power Corporation (NTPC), whose plants generate more than 25 percent of India's electric power, was so successful that NTPC is investing \$2.5 million in suggested energy efficiency improvements this year. According to NTPC, the firm's investment in energy efficiency technology at the Dadri plant will save millions annually in coal purchases, while generating a huge reduction in pollution.

Under its Climate Change Initiative, USAID will concentrate resources and attention on a set of countries and regions selected because of their current contributions and predicted future contribution to net global GHG emissions, and their government's receptivity to taking concrete action. The nine countries and three regions receiving priority are Brazil, Central Africa, Central America, Central Asia, India, Indonesia, Mexico, the Philippines, Poland, Russia, South Africa, and Ukraine. At least 40 percent of USAID's grant assistance for climate change programs and two-thirds of credit assistance will be concentrated in these key countries and regions. Under the energy section of the initiative, USAID is helping establish incentive structures and policy frameworks necessary to foster private investment in clean fuel, renewable, and energy efficiency projects in the key countries.

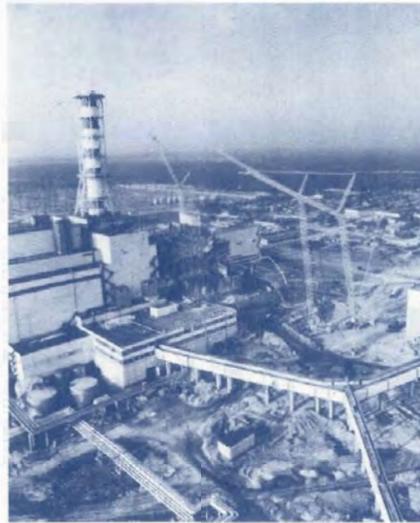
**SOURCES OF GREENHOUSE GAS EMISSIONS
IN DEVELOPING COUNTRIES**



Source: USAID Global Environment Center

Ukraine Chernobyl Closure and Energy Assistance

The Government of Ukraine (GOU) and the G-7 countries have signed a Memorandum of Understanding (MOU) for the closure of Chernobyl in 2000. The MOU includes a set of actions supported by the G-7 and commitments by the GOU that will provide adequate and reliable electricity for the future beyond closure. The MOU calls for power sector reforms; investments in power systems rehabilitation, supply and energy efficiency; improvements in nuclear safety; and reconstruction of the shelter over the destroyed reactor. USAID has supported GOU's power sector reform, including support for the development of the National Electricity Regulatory Commission and restructuring of the generation and distribution companies. In addition, USAID's energy efficiency program, including a \$15 million Energy Efficiency Initiative, has supported the establishment of nongovernmental energy efficiency organizations, such as the Ukrainian Chapter of the Association of Energy Engineers; municipal energy efficiency, including water systems and school demonstrations; industrial energy efficiency, including energy audits and \$1.5 million in efficiency equipment; energy efficiency trade and investment and project preparation; and electric utility DSM in the competitive wholesale electricity market.



Reconstruction at Chernobyl.

Caspian Oil and Gas Initiative

The states of Central Asia and the Caucasus possess world-class quantities of oil and gas. Development and transportation of these resources will not only supplement and diversify world petroleum supplies, but will also help ensure the political and economic development and stability of these New Independent States. USAID launched its Caspian Oil and Gas Initiative in 1996 to assist these nations (except Azerbaijan) in developing the laws, regulations, and government institutions in the oil and gas sectors necessary to attract private investment to the region. Private investment is needed to help these nations develop their oil and gas resources and create the transportation systems necessary to move their products to world markets.

Through the initiative, USAID has assisted governments in the region to develop petroleum laws; address transportation issues critical to the development of east-to-west oil and gas pipeline routes; and create frameworks for oil and gas development and transportation that meet international environmental, health and safety, and technical standards. Building on work performed under the initiative, USAID is also beginning implementation of its Caspian Environmental Partnership Initiative (CEPI). CEPI is designed to address the environmental aspects of oil development in the Caspian Sea and the trans-Eurasian corridor to Western markets.

Regional Networks. Energy restructuring and privatization issues in Central and Eastern Europe and the New Independent States are being addressed not only by USAID-country specific activities, but also through regional networks that are necessary for the long-term sustainability of energy systems in the region. The activities are designed to expand regional and international energy trade and the integration of energy systems with Western Europe and international energy markets. The program supports regional and interconnection in the Baltics and Northwestern Russia, CENTREL, and Central Asia; regional energy efficiency networking for both business development and policy reform; regional cooperation in power management and energy regulation through support for the development of the Central European Power Management Institute and the establishment of a regional regulatory association for countries in Central and Eastern Europe and the New Independent States.

Achieving Lasting Results

Through its programs in energy during the last decade, the Agency has – with a relatively small investment – helped bring about a transformation in the energy sectors of assisted countries that has opened up a U.S. export market in energy products and services valued at more than \$50 billion per year.

Private Power in Nepal. *The Upper Bhote Koshi Hydroelectric Project is the first fully privately funded project to be undertaken in Nepal. This has only recently been made possible because of statutory changes in the Jaws of Nepal and establishment of a clear, stable framework under which the laws are administered. USAID projects have been instrumental in helping the Government of Nepal establish a private power framework that has allowed this and other projects to go forward.*

USAID's work encouraging private investment in clean, efficient energy systems has produced significant, sustainable results in more than 50 countries. Through its programs in energy during the last decade, the Agency has – with a relatively small investment – helped bring about a transformation in the energy sectors of assisted countries that has opened up a U.S. export market in energy products and services valued at more than \$50 billion per year. The USAID model is now being widely replicated by other development assistance agencies, both in energy and other infrastructure sectors. By Fiscal Year 2003, USAID expects its programs in the energy sector to have produced results that include:

- avoidance of more than 25 million tons of GHG emissions
- leveraging more than \$1.3 billion of public and private sector investments to finance environmentally sustainable energy development
- adoption of 65 policies by national and state governments to provide the incentives and regulations required for sound energy development
- access to energy generated from solar, wind, mini-hydro, and other renewable sources for as many as 3.5 million rural and urban dwellers.



Upper Bhote Koshi Hydroelectric Project.

Courtesy of Bureau of Energy Resources, Nepal

USAID Global, Regional, and Mission Contacts

USAID has four regional bureaus (Africa, Asia and the Near East, Europe and the New Independent States, and Latin America and the Caribbean) with field missions and offices in more than 70 countries. The missions and regional bureaus conduct energy projects and programs in accordance with their strategic objectives and the Agency's strategic plan. The extensive field network, unique among international donors, greatly facilitates access to key decision-makers in government and private sector organizations. The presence of USAID staff in the field also improves the ability to adapt technology to meet the requirements of local people and provides opportunity for effective policy discussions. USAID field missions employ foreign service nationals with knowledge about the country, experience in dealing with officials of their government and local organizations, and insights into how the economy and society function. The invaluable experience gained from the field shapes the Agency's actions worldwide.

USAID's Bureau for Global Programs, Field Support, and Research, based in Washington, D.C., provides technical and programmatic leadership and support to the Agency, its field missions, and regional bureaus on issues that transcend national boundaries. Within the Bureau is the Global Environment Center, which coordinates the Agency's global environmental programs and provides technical and programmatic leadership and support to the Agency and its missions in the areas of sustainable natural resources, cities, and energy systems. The Center's energy programs are managed by its Office of Energy, Environment, and Technology (EET).

USAID works with many other U.S. government organizations in implementing its programs. In addition to the U.S. Department of State, USAID cooperates closely with the U.S. Department of Energy on energy technology, renewables and energy efficiency, nuclear safety, and energy trade issues; U.S. Department of Commerce and the U.S. Trade Development Agency on commercial business development and project feasibility; U.S. Department of Treasury on international financial institution lending; and the U.S. Environmental Protection Agency, Nuclear Regulatory Commission, and U.S. Department of Interior on environmental safety and resource management issues.

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National Association of State Energy Offices – <http://www.naseo.org>
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