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ENERGY, ECONOMIC GROWTH, AND TRADE

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Bolivia ©Lutheran World Relief, Courtesy of Photoshare

Economic growth is critical in reducing poverty, increasing self-sufficiency, and achieving prosperity. Trade and investment accelerate growth, stimulating income and wealth generation.

Virtually all economic activity is dependent on energy, whether in urban, peri-urban, or rural areas. At the World Summit for Sustainable Development (WSSD) held in Johannesburg, South Africa, in 2002, leaders from around the world highlighted the critical role of energy in reducing poverty and enhancing sustainable development.

Electricity and modern fuels are integral to economic development and trade and underpin agriculture, industry, transportation, and commercial enterprises in all countries. Though energy is not sufficient on its own to achieve economic growth, it is a necessary prerequisite. Populations that lack access to energy services cannot create the conditions needed to lift themselves out of poverty.

The Energy-Economic Growth and Trade Nexus

Energy advances economic growth and trade activities via:

- **Industrialization.** As developing nations industrialize and move toward modern commerce, there is an urgent need for high-quality electricity and fuel services. The largest developing nations—China, India, Brazil, Mexico, and South Africa—have strong industrial and commercial sectors and corresponding high energy demand similar to those of developed nations.
- **Agricultural markets and trade.** For many developing countries, agriculture continues to be the dominant sector for employment and one with significant potential for growth as countries enter the global marketplace. Energy is key to expanding

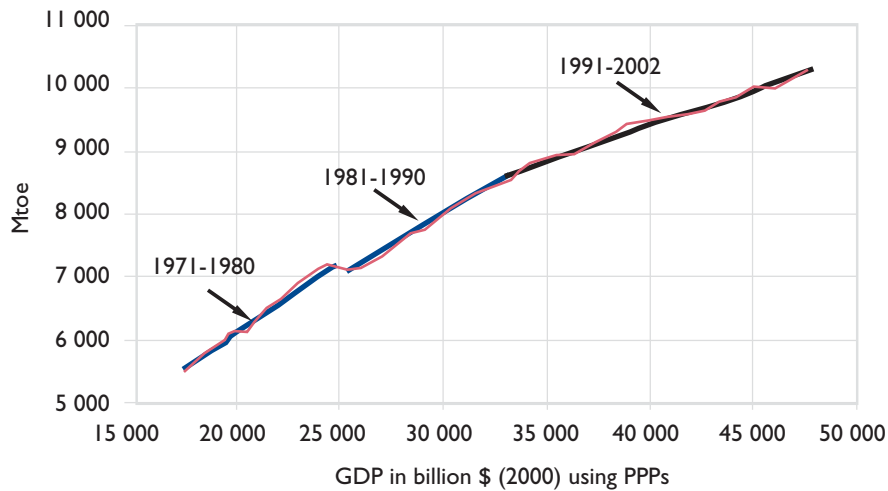
agricultural markets and trade by contributing to increased and diversified crop production, powering the chain of farm – to – shelf production, and transporting products to market.

- **E-commerce.** Electronic commerce and information and communication technologies (ICT) are often essential tools for economic development. E-commerce permits local businesses to access domestic and international markets and reduce transaction costs, thus facilitating trade. ICT provides valuable information for industry and agriculture, enabling businesses to make informed decisions about when and where to sell their products, and to design and adapt products to better suit customer needs. As large domestic and multinational companies begin to require their business partners to communicate via electronic means, enterprises in developing countries need to be able to respond or they will be at a competitive disadvantage. For e-commerce and ICTs to operate, reliable supplies of electricity are a necessity.
- **Increased productivity.** Used efficiently and effectively, energy services can enhance productivity, increase output, boost competitiveness, and strengthen local economies. Electricity can transform businesses from manual labor to mechanization and automation, stimulate uniform production, and improve quality, thus allowing for higher prices for goods and services. Consistent products also help to establish a more reliable clientele base.
- **Small, medium, and micro-enterprises (SMEs).** SMEs rely on energy services for a range of needs, including lighting, refrigeration, cooking, radios, phones, tools, grain mills, water pumping, and drying for food preservation. Access to energy is crucial to the establishment and growth of SMEs, particularly in rural and peri-urban areas where they can be a main source of employment for the poor.

“The bottom line is that you cannot attack poverty, improve food security, and build economic opportunity in poor countries without energy. You cannot have economic growth without energy, including in the rural areas. I go to the rural areas of the world all the time. I ask, ‘What do you want here? What would change your life in this village more than anything else?’ And they say, ‘We need energy to light our homes and classrooms, to pump water, to make bread, to power our small workshops, to listen to radios, to learn on computers and gain access to the Internet, to refrigerate vaccines in our hospitals...”

Andrew Natsios, USAID Administrator

World Primary Energy Demand and GDP, 1971-2002.



Economic growth is the primary driver of energy demand. Energy contributed significantly to economic growth in all countries studied in the World Energy Outlook 2004 report and was a leading driver of growth in many. Demand for electricity and transport fuels is closely aligned with gross domestic product (GDP), and they increase in a broadly linear fashion. Source: International Energy Agency, *World Energy Outlook 2004* (PPPs=Purchasing Power Parities)

- **Job creation and income generation.** Economic growth that creates jobs and enhances incomes relies on expanded use of energy. Electricity can extend the working day and increase production, improve safety and working conditions, and draw customers.

Energy Quality, Reliability, and Energy Efficiency

Simply ensuring that electricity is available for industry and commerce is not sufficient. If electricity is not highly reliable and of sufficient quality, the costs to industry of power outages and the need for investment in backup systems can be substantial and limit economic growth. In Eastern Europe and Central Asia, the existing, extensive energy infrastructure is deteriorating rapidly. In these regions, the primary challenge is not to expand access but to minimize the loss of existing supplies and improve dramatically the quality, reliability, efficiency, and affordability of the existing infrastructure.

Studies show the impact of power outages on economic productivity is substantial. In China, textile and electronic companies lose, on average, 1% of their output to power outages. Their Indian counterparts lose approximately 9.5%. In Nepal the overall economic impact of planned and unplanned outages in the utility supply translates into almost 4.5% of the industrial sector GDP or 0.5% of the national GDP in 2000 – 01. This underscores the importance of improvement in electricity supply reliability as a major factor in enhancing economic growth.

Finally, rising oil prices, which have more than doubled over the last two years from US\$25 per barrel to US\$67

per barrel (as of August 2005), have highlighted the need to focus on energy efficiency worldwide. Inefficient use of energy wastes both financial and natural resources. High oil prices, coupled with low efficiency in productivity per input of energy, limit the extent to which a developing country can engage in profitable international trade. Improved energy management by industry can lower production and operating costs and make products and services more competitive internationally.

Powering Economic Growth and Trade in Urban and Rural Areas

Around the world, people are moving from rural areas to cities and towns in the search for better jobs and financial stability. In 2000, about 2.85 billion people—nearly half of the global population—lived in urban areas. This figure is expected to swell to about two-thirds of the population by 2025, with the most rapid changes occurring in the developing world, where urban populations are growing at about 3.5% per year.

This population shift places additional pressure on already strained infrastructure, institutions, and natural resources in the urban areas. From the energy perspective, two key issues have emerged in urban areas—access and the environment. As urbanization continues to outpace energy service supply, meeting the demand of poor communities becomes increasingly difficult. Today, an estimated 25 – 50% of urban residents in developing countries live in slums and squatter settlements. Finding ways to provide access to affordable

energy services as well as opportunities for jobs, income, and economic development is essential.

It is critical that economic growth not occur at the expense of the environment. The World Health Organization reports that air pollution in cities has reached crisis proportions, with only 15% of the largest cities in developing countries reporting acceptable air quality. With the primary source of air pollution being fossil fuels used in vehicles, industries, and businesses, it is imperative to find other ways to meet these growing energy needs while reducing air pollution and climate impacts. Cleaner energy sources, including natural gas and renewable energy (biomass, geothermal, hydropower, solar, and wind), in combination with increased energy efficiency, must be an integral part of the solution.

In rural areas, access to reliable and affordable electricity and non-electric energy services significantly broadens opportunities for the development of many economically productive activities, including agro-enterprises and fishing. Providing energy for agricultural production and processing, often the largest source

of employment in rural areas, is an important way to grow beyond subsistence farming and out of poverty. Development of non-farm, income-generating activities is also an important element of building wealth in rural areas, and the availability of modern energy services is one essential ingredient in the operation of these businesses.

How Is USAID Helping?

USAID's energy programs seek to increase energy access and affordability in both urban and rural areas and promote more efficient use of clean energy, thereby enhancing economic growth and trade in USAID's partner countries. USAID works in concert with governments, the private sector, and non-governmental organizations in developing countries to inform policy, increase investment, and raise public awareness on the linkages of energy to economic growth, development, and trade. USAID energy programs also work in collaboration with other programs and sectors that support economic growth, including agriculture, industry, transport, and SMEs.

SOMALIA—ENERGIZING ECONOMIC GROWTH AND TRADE



USAID/ Jim Shanor, ADRA

LEFT: USAID helped Shariif and other energy providers in Somalia form an electricity cooperative.

Shariif Butaan is an enterprising man. A diesel mechanic in Berbera, Somalia, he used a reconditioned generator to supply electricity to his home and to his neighbors, whom he charged by the bulb. He became managing director of the Berbera Electrical Enterprise, which supplies almost all of the electricity for this port city, and head of the Berbera Fishing Cooperative. He owns commercial carpentry and mechanical workshops and is chairman of an umbrella group of all private electricity companies in Hargeisa. But he has not always been so affluent or influential.

Shariif was raised with little formal education, and after Somalia's civil war ended, he became frustrated with the limited sources of available power. He eventually came into contact with USAID, which is supporting an economic diversification project that promotes alternative and renewable energy technologies.

USAID helped Shariif engage other energy providers in the area to form an electricity cooperative. The providers invested in wind generators to supplement the patchwork system, and they now fulfill much of the area's electricity needs. To complement this system, Shariif is working to raise the standards for safety and efficiency in electric wiring across northern Somalia. Shariif also spearheads a USAID training program in solar cookery, a method that uses substantially less charcoal than traditional cooking techniques and, therefore, conserves scarce trees. The program uses a standard model of a solar cooker that Shariif himself improved.

Converting Shariif Butaan from a conventional energy magnate to a proponent of renewable energy has been one of the project's greatest achievements. While Somalis have creatively devised formal and informal economic systems to adapt to their state's collapse, the country remains extremely poor and

underdeveloped. Respected entrepreneurs like Shariif must be encouraged to take on active leadership roles if meaningful rehabilitation and development is to occur.

HONDURAS—ENHANCING ECONOMIC GROWTH AND TRADE WITH HYDROPOWER



USAID

LEFT: La Esperanza hydroelectric power plant.

In Honduras, USAID is advancing economic growth through supporting the developer of the La Esperanza Hydroelectric Plant, Consorcio Inversiones, S.A. (CISA). USAID provided business planning assistance and a US\$250,000 construction loan during the early stages of the project, enabling CISA to secure approximately US\$9 million in financing from a private Honduran bank, BGA, and the Central American Bank of Economic Integration (CABEI). La Esperanza began operation in June 2003 and is expected to reach full capacity in 2005. With three powerhouses located along the Intibuca River, La Esperanza sells electricity to the state-owned Honduran utility, ENEE, supplying much needed energy during peak hours when the country demands additional electricity, supplied for the most part from expensive, imported fossil fuels.

As a result of the project, CISA was instrumental in planting more than 18 hectares of new forests. The project provides direct employment to 40 local people and indirect jobs and economic activity for an additional 120 people. It is estimated that 45,000 tons of greenhouse gases will be displaced annually by avoiding the use of fossil fuels to produce electricity. As Ron Turner, president of CISA notes, "We have had good support from the central and local governments. In La Esperanza and surrounding communities, we have a strong labor pool and active business support. This positive development climate, plus USAID support, should make it possible to construct a number of similar projects in Honduras."

MODERN ENERGY-ENABLED SERVICES AND IMPACTS FOR ECONOMIC GROWTH AND TRADE	
Services	Impacts
High-quality reliable electricity, modern fuels, and thermal energy services for mining, manufacturing, and industrial processes; agricultural production, processing, packaging, and shipping; commercial enterprises (especially lighting, computers, office equipment); construction of infrastructure (e.g., roads, power plants and transmission systems, buildings); and information and communications systems.	Expanded and diversified industrial, commercial, and agricultural output; and improved infrastructures for water, telecommunications, transport, and trade. Increased GDP per capita.

This document is one of a set of brochures developed by the U.S. Agency for International Development to highlight energy's critical links to other sector priorities of USAID, its overseas missions, partner countries, and other stakeholders in the development community. The brochure set includes briefs on Energy and:

Gender | Small and Medium Enterprise | Natural Resource Management and the Environment | Health and Education | Economic Growth and Trade | Democracy, Governance, and Conflict Management | Water and Agriculture