

Energy Services for Poverty Reduction and Economic Growth

Reliable, affordable, and sustainable energy services for agriculture, industry, commerce and households underpin growth in productivity and output, and improve the welfare of the poor. However, in many International Development Association (IDA) countries, households and enterprises lack service altogether or suffer high cost and unreliable energy supplies. In fiscal year (FY) 2010, the total cost of energy projects with IDA participation was about US\$2.7 billion, of which IDA financed US\$1.36 billion. IDA resources have improved access and reliability to energy supply and are facilitating the shift towards lower-carbon options of energy supply. Looking ahead, IDA's strategy in the sector will seek to reinforce good governance, improve the financial and operational performance of utilities, leverage increased investment and ensure that energy sector development and reform is pro-poor and sustainable.

Challenge

For the past ten years, under-investment in the power sector in IDA countries has resulted in a huge and growing power supply shortfall, unreliable services and slow progress in connecting poorly served populations. The challenge of providing reliable access is now balanced with rising concerns about climate change, and adapting to ensure security of power supply in the future.

Table 1. 2008 Electrification Rates, Selected IDA Countries

Country	Electrification Rate (%)			People Without Access (Millions)
	Total	Urban	Rural	
Afghanistan	14	22	12	23.3
Bangladesh	41	76	28	94.9
Cambodia	24	66	13	11.2
Malawi	9	25	5	13.0
Tanzania	12	39	2	36.8
Uganda	9	43	4	29.1
Yemen	38	75	22	14.2

Source: International Energy Agency World Energy Outlook 2009.

Lack of energy services in many IDA countries is due to chronic underinvestment in the sector as well as to sub-optimal policies and weak institutions. The support of IDA in the sector encompasses investment as well as policy and institutional support to help countries improve energy services, but reliable access to modern energy services, including electricity, remains a key challenge for poor and rural populations in many developing countries (Table 1).

Approach

IDA's focus has been on improving access to, and reliability of, modern energy services, while at the same time addressing the underlying policy and institutional issues that have contributed to the lack of investment in the sector. In addition, IDA is often the largest financier of critical energy infrastructure, and its investment and guarantees have played a critical role in leveraging both public and private investment. IDA has leveraged about twice the funds it committed in the previous

three fiscal years. IDA is also increasingly supporting decentralized renewable energy sources, which are not just cleaner, but less costly and more affordable solutions to improving access.

Results

The projects below illustrate the variety of interventions supported by IDA, and the role IDA has played in the energy sector around the world.

In **Bangladesh**, IDA has been active for a decade in the Rural Electrification and Renewable Energy Development (RERED) Project, helping connect more than 900,000 households through grid extensions and solar home systems. With additional financing approved in FY2010, the government of Bangladesh's original target of just 50,000 new connections through solar home systems has been revised to a million systems by 2012, a twentyfold increase. To help the government address long-term chronic power shortages,

IDA also helped design and implement a new energy efficiency program to reduce demand for power through the use of energy efficient Compact Fluorescent Lights (CFLs), through the Efficient Lighting Initiative of Bangladesh. The first stage of the Initiative set a new one-day worldwide record for CFL distribution, with 5 million bulbs distributed in a single day, reducing demand for electricity by 50 megawatts (MW); a further 5.5 million will be distributed by the end of 2010. IDA helped Bangladesh secure Carbon Financing for the project, and is assisting the government to build up local manufacturing capacity to meet demand for replacement bulbs.

In **Bolivia**, IDA has been working to provide 90,000 people in rural and peri-urban areas with electricity since 2005 through the Decentralized Infrastructure for Rural Transformation Project. In rural, remote areas of Bolivia, where grid electrification is not economically viable, the project has developed a new model to provide sustainable access to solar electricity. Since project inception in 2005, more than 9,200 solar home systems (SHS) have been installed in the poorest rural areas of Bolivia, benefiting an estimated 45,000 people. In addition, 87 SHS have been installed in schools and clinics, benefiting another 30,000 people, and public lighting has been provided for 20,000 inhabitants in El Alto, the large poor satellite city of the country's capital. Approximately 8,000 new electricity connections are under construction, as part of densification of the existing electricity network in peri-urban areas (extension of the grid to consumers that are nearby but outside concession obligations). The project also supported the "Electricity Program to Live with Dignity", by establishing regulations and a regulatory body for off-grid rural electrification in 2007.

In **Kenya**, IDA has engaged in the development of geothermal energy in the Rift Valley for nearly 15 years, helping supply clean energy to the growing economy. The Kenya Electricity Expansion Project, approved in FY2010, will help develop 280MW of the country's 7,000MW geothermal energy potential, supplying about 20 percent of the required installed generating capacity by 2015, and reducing Kenya's reliance on hydropower energy, which is vulnerable to drought. To accompany this new resource development, IDA is assisting the country in developing new transmission and distribution networks that will help connect 330,000 new households to the grid, including 50,000 low-income customers that reside in Kenya's slums. An ongoing IDA-financed project has added 35 MW of geothermal power and already helped to connect about 300,000 customers. IDA is working with the Government of Kenya to implement its energy targets through new policy mechanisms, including establishing a wholesale electricity market that encourages private players to enter and stay in the Kenyan electricity sector instead of providing just emergency supplies, as they have since 2006.

In **Laos**, about 38,000 households will receive modern electricity services for the first time through Phase II of the Rural Electrification Program, approved in FY2010. A third of these new connections will be through renewable energy sources such as solar home systems and pico-hydro systems. IDA is also working to address the underlying structural issues of the Laotian energy sector by improving the financial performance of the electricity utility, Electricité du Laos, and building capacity at the Ministry of Energy and Mines to ensure sustainable development of the power sector. At the utility, IDA is supporting tariff reform

that brings fees to costs while ensuring affordability of electricity to rural households, financing the purchase of better technology systems to ensure customers are correctly and consistently billed, helping reduce technical and nontechnical losses in the distribution of electricity, and improving the environmental safeguards for rural electrification. At the Ministry, IDA is supporting the overall planning process for rural electrification to ensure the Government's targets for access are met. IDA is also helping develop low carbon energy plans for rural areas and assisting in the creation of an enabling environment that allows small and medium enterprises to participate in decentralized energy services.

In **Mali**, the Household Energy and Universal Access Project promotes electricity services in peri-urban and rural areas, enhancing the quality and efficiency of health and education centers through the provision of electricity connections. The project also fosters sustainable management of forestry resources and biomass energy, such as fuel wood. Since the project's approval in 2004, 43,000 homes, 803 public institutions, including 172 rural schools, and 139 health clinics have been connected. Forested areas under sustainable management have grown from 350,000 hectares to 873,805 hectares.

Since the beginning of the decade, **Tajikistan** has faced severe shortages of energy in winter, which culminated in a crisis in 2007. IDA responded to this emergency by both ensuring that critical facilities, such as hospitals, had standby power year-round, but also by working to ensure that the improvements were sustainable. Energy efficiency measures financed by IDA included the installation of 105,000 new meters that noticeably reduced power consumption and increased bill collec-

tion, increased water reserves at Tajikistan's major hydropower plant, and even provided 250,000 people in northern Tajikistan with basic modern energy services for the first time. With support provided by IDA in FY2010, Tajikistan is now on track to meet not just its own demand, but also to supply neighboring Afghanistan with electricity beginning in summer 2012, with a fiscally sound energy sector.

IDA Contribution

IDA credits and grants for energy projects amounted to about US\$1.36 billion in FY2010. Lending to IDA countries from the International Finance Corporation (IFC), the Multilateral Investment Guarantee Agency (MIGA) and specialized trust funds, such as the Global Environment Facility (GEF) and Carbon Finance reached US\$577 million, in addition to the funds provided directly by IDA, providing US\$1.94 billion to support energy access in IDA countries.

Partners

Given the tremendous challenge of ensuring reliable energy access, IDA has worked with a number of development partners in financing projects, combining each institution's capabilities and strengths. The projects collectively leveraged twice their investment amounts, drawing financing from a combination of other sources, including public financing from the recipient governments, private financing from both domestic and international sources, and financing by the World Bank's counterpart development agencies, such as the African Development Bank, the Japan International Cooperation Agency and Kreditanstalt für Wiederaufbau.

Table 2. Total IDA Energy Credits and Grants by Region (US\$ millions)

Region	2003-2006	2007-2010
Sub-Saharan Africa	1,384	3,519
East Asia and the Pacific	677	799
Europe and Central Asia	259	201
Latin America and the Caribbean	40	44
Middle East and North Africa	63	172
South Asia	834	1,269
Total	3,258	6,005

Source: Energy Anchor database, data as of August 2010.

Table 3. Total IDA Energy Credits and Grants by Type of Project (US\$ millions)

Region	2003-2006	2007-2010
Energy Efficiency	99	744
Large Hydropower	85	568
New Renewable Energy	292	759
Oil, Gas and Coal (Upstream)	111	110
Other Energy	760	1,309
Thermal Generation	67	318
Transmission and Distribution	1,843	2,196
Grand Total	3,258	6,005

Source: Energy Anchor database, data as of August 2010.

The Energy Sector Management Assistance Program (ESMAP) has helped IDA countries build capacity at public energy institutions and helped governments develop plans for low carbon growth. The Public-Private Infrastructure Advisory Facility (PPIAF) has worked to enable access to private international funds in IDA countries. The Netherlands dedicated US\$29-million in FY2009 to support analytical

and technical assistance activities in Sub-Saharan Africa through the Africa Renewable Energy Access Grants Program (AFREA). AFREA improves public and private sector capacity for renewable energy projects in the region, catalyzes additional investment for renewable energy, and expands access through these renewable energy projects. Finally, in FY2010, the Scaling Up Renewable Energy in

Low Income Countries (SREP) Fund, one of the Strategic Climate Funds of the Climate Investment Funds became active. The SREP Fund stimulates economic growth through the scaled-up development of renewable energy solutions and acts as a catalyst for the transformation of the renewable energy market by obtaining government support for market creation, private sector implementation, and productive energy use in low-income countries.

Moving Forward

Globally, IDA's strategy will seek to support: (i) regional efforts to develop energy corridors that could save sub-Saharan Africa US\$2 billion a year in electricity costs; (ii) policy, institutional and governance improvement of the energy sector's institutions, including for instance improving financial sustainability of utilities; (iii) sector-wide approaches to plan and finance expanded access in a more systematic way while facilitating donor coordination; (iv) energy efficiency programs that include the deployment of energy saving options for lighting and appliances; (v) low-carbon energy to tap into new resources for climate finance and balance the needs for energy access while ensuring environmental sustainability; and (vi) modern biomass and lighting programs to deliver affordable,

modern, and efficient lighting products and improved cooking stove programs through public private partnerships.

In post-conflict countries such as Afghanistan and Sierra Leone, IDA focuses on the reconstruction and rehabilitation of destroyed power facilities. In countries facing power shortfalls due to droughts that have curtailed hydropower production (as in East Africa), IDA assistance supports emergency capacity additions while at the same time helping with planning to diversify supply sources in the longer term. In countries with high potential for increased private sector participation (for example, Bangladesh, Nigeria and Vietnam), IDA can help improve sector governance that underpins increased private sector investment, and provide funding and guarantees that encourage private sector participation.

In countries where the policy framework is favorable, IDA proposes to coordinate closely with the donor community to assist countries prepare and implement sector-wide programmatic approaches. The approach is designed to coordinate donor support and to mobilize increased investment to scale up energy access.

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