ADB

Success Rates

Successful Projects in the Energy Sector 2003–2005

Operations Evaluation Department
Asian Development Bank

Hunan Lingjitan Hydropower

Number:
Loan 1318-PRC
Approval:
27 September 1994
Effectivity:
30 May 1995
Closure:
8 November 2001
Disbursements:
$89,301,000

Evaluated:
2005
Performance:
Successful

Rationale:
Rapid economic growth in the People's Republic of China in the 1990s posed formidable challenges to the power sector. To respond to severe power shortages and offset heavy dependence on coal-based generation—along with its accompanying environmental problems—the government launched an energy conservation program under which coal consumption was expected to decline as a consequence of accelerated hydropower development.

Expected Outcomes:
The project aimed to

- construct a 240-megawatt (MW) run-of-river hydropower scheme along the Yuanshui River of Lingjintan in Hunan Province, which would also serve as a reregulating station for the 1,200-MW Wuqiangxi hydropower scheme being constructed upstream; and
- support the institutional development of Hunan Electric Power Company, and tariff policy and energy conservation reforms in Hunan Province.

Accomplishments:
The addition of a 270-MW station (including one 30-MW generating unit in addition to the eight planned originally) accelerated the development of Hunan Province's hydropower resources and helped relieve current and future power shortages. As the system load grows and as the Yuanshui River hosts more upstream hydropower projects, the project's operation is expected to become even more effective. The project has also enabled the Wuqiangxi hydropower station to increase its peaking capability. With the Lingjintan station able to reregulate discharges from the Wuqiangxi station, the latter can provide a total of 1,248 gigawatt-hours per year of dependable energy for peaking, equivalent to the increased availability of more than 150 MW of peaking capacity.

Details:
www.adb.org/Documents/PPERs/PRC/26198-PRC-PPER.pdf

Second Industrial Energy Efficiency and Environment Improvement

Number:
Loan 1436-PRC
Approval:
9 May 1996
Effectivity:
13 January 1997
Closure:
25 February 2002
Disbursements:
$149,297,000

Evaluated:
2005
Performance:
Successful

Rationale:
In the early 1990s, energy intensity in the People's Republic of China was the highest among ADB's developing member countries. Over 75% of total primary energy consumption was accounted for by coal, which had serious impacts on the environment. From that time, the government began to implement programs to promote energy efficiency and environmental improvement, targeting a 20% reduction in energy intensity between 1995 and 2001. In 1992, ADB had provided a loan to finance investments in energy conservation and environmental improvements in the cement, fertilizer, iron, and steel subsectors.

Expected Outcomes:
The project aimed to

- undertake policy reforms in energy conservation and ensure continued progress in market-based energy pricing,
- finance investments in energy efficiency and environmental improvements including technological restructuring, and
- introduce modern management systems.

Accomplishments:
All envisaged physical outputs of the project were achieved with actual production exceeding designed capacity. All subprojects also achieved anticipated energy efficiency and environmental improvements. Given wide replication throughout the country of the new production technologies and facilities adopted under the Huaxin Cement Company Limited, Jinhua Chemical (Group) Corporation, and Tianjin Soda Plant subprojects, as well as the willingness of domestic commercial banks to lend for similar energy efficiency initiatives, expected sector-wide demonstration effects were largely realized.

Details:
www.adb.org/Documents/PPARs/PRC/PPAR-PRC-25252.asp

Nam Leuk Hydropower

Number:
Loan 1456-LAO
Approval:
10 September 1996
Effectivity:
17 January 1997
Closure:
13 March 2003
Disbursements:
$48,931,000

Evaluated:
2004
Performance:
Successful

Rationale:
From 1972, the Lao People's Democratic Republic (Lao PDR) had depended almost entirely on power from the Nam Ngum power plant to export surplus power to Thailand. But as load demand increased over the years, domestic consumption was using almost all of Nam Ngum's capacity. In 1993, Lao PDR and Thailand signed a memorandum of understanding that envisaged the export of 1,500 megawatts (MW) of electric power to Thailand by 2000. In October 1995, the government signed a second memorandum of understanding with the government of Viet Nam to supply 1,500–2,000 MW before 2010.

Expected Outcomes:
The project aimed to

- support the optimal development of the country's power subsector;
- provide generating capacity to meet domestic demand and increase exports of electricity to Thailand;
- strengthen the capabilities of Electricité du Laos to prepare, design, and implement environmentally sustainable projects; and
- strengthen the management and protection of the National Biodiversity Conservation Area at Phou Khao Khouay.

Accomplishments:
The Nam Leuk power plant's operational performance was excellent from the commissioning of the 60-MW hydropower generating station. In its first 3 years of operation, the project exceeded its expected average long-term capacity to generate 215 gigawatt-hours per year. This was attributed to favorable hydrology and gave confidence in the project's capacity. From the project's performance, and considering the hydrological database that went into the hydrology study, observations support the belief that the power output is strongly renewable and reliable, and will sustain the project over its life. With diligent operation and appropriate maintenance, the project is expected to operate for more than its 40-year design life.

Details:
www.adb.org/Documents/PPARs/LAO/PPAR-LAO-29163.pdf

Seventh Power

Rationale:
The Government of Nepal's Seventh Five Year Plan (fiscal years 1984–85 to 1989–90) included development of indigenous energy resources to substitute for imported fuels, providing a reliable power supply, and reducing fuelwood consumption. Assistance was needed to help the Nepal Electricity Authority improve the efficiency and reliability of its power system through rehabilitation in urban areas and meet growing energy demand in rural areas through electrification.

Expected Outcomes:
The project aimed to

- rehabilitate distribution networks in five towns to improve the quality of electricity supply and to reduce system losses, and
- extend subtransmission and distribution networks to additional rural areas in the Terai and the hills.

Number:
Loan 1011-NEP
Approval:
11 January 1990
Effectivity:
18 September 1990
Closure:
9 August 1999
Disbursements:
$55,093,000

Evaluated:
2004
Performance:
Successful

Accomplishments:
With the installation of (i) about 185 megavolt-ampere of new 132-kilovolt (kV), 66-kV, and 33-kV substation transformer capacity; (ii) more than 320 kilometers (km) of new 33-kV subtransmission line; (iii) almost 2,500 km of high-voltage distribution line; and (iv) more than 2,300 km of low-voltage distribution line, electricity was reticulated to almost 1,000 previously unelectrified load centers, providing electricity access to more than 200,000 new customers. In addition, new 11-kV and 400-volt distribution lines were constructed or rehabilitated to improve the quality and reliability of supply in five major towns and two significant load corridors.

Details:
www.adb.org/Documents/PPARs/NEP/PPA-NEP-18082.pdf

Gas Rehabilitation and Expansion

Number:
Loan 1285-IND
Approval:
7 December 1993
Effectivity:
15 August 1994
Closure:
22 June 1998
Disbursements:
$157,475,000

Evaluated:
2003
Performance:
Successful

Rationale:
India faced the prospect of a steadily rising gap between energy demand and supply from domestic sources. There were substantial untapped local reserves of natural gas, as well as opportunities to promote efficient use of gas resources by improving the tariff structure based on market pricing.

Expected Outcomes:
The project aimed to

- utilize gas being flared at the Bombay High field to conserve energy and improve the environment,
- bring additional gas available from the South Bassein and other satellite fields ashore for utilization,
- support India's gas development strategy with the formulation of a long-term marketing strategy,
- accelerate utilization of natural gas as a substitute for petroleum products and coal,
- encourage increased private sector participation in the gas subsector through the financial restructuring of the Gas Authority of India Limited, and
- promote efficient utilization of natural gas by supporting the adoption of market-based pricing.

Accomplishments:
The project increased the throughput of the Hazira-Bijaipur-Jagdishpur pipeline from 18 to 33 million standard cubic meters per day, utilizing gas that would otherwise have been flared. It also met or exceeded other targets, such as providing inputs to the electric power and fertilizer industries, creating whole new environmentally-friendly markets for compressed natural gas in Delhi and Mumbai—gas has provided inputs for 4.02 million tons of fertilizer production annually, 1.57 million tons more than envisaged; 2,483 megawatts (MW) of electricity generation, 783 MW more than forecast; and 1.1 million tons of ethane/propane/liquefied petroleum gas, more than double the expected amount. The project also stimulated substitution of coal in the glass-making industries of Ferozabad and the iron foundries of the Agra and Mathura Refinery, all of which contributed substantially to the government's policy to reduce pollution in the area of the Taj Mahal and other historic and heritage monuments. Through the project and other activities, the Gas Authority of India Limited adopted modern technologies and best practices, allowing them to match international standards for the gas industry.

Details:
www.adb.org/Documents/PPARs/IND/PPA_IND_26346.pdf

Rural Electrification

Number:
Loan 1375-BHU
Approval:
19 September 1995
Effectivity:
8 February 1996
Closure:
6 April 2000
Disbursements:
$6,636,000

Evaluated:
2003
Performance:
Successful

Rationale:
The Government of Bhutan's Seventh 5-Year Plan (1992–1997) recognized the need to conserve natural resources and reduce the rate of forest depletion. In 1995, 80% of the population did not have access to electricity—firewood accounted for about 77% of energy consumption. The plan envisaged to boost rural electrification as a substitute to pinesap, wood, and imported kerosene for cooking, heating, and lighting. The lack of electric power was seen as a major bottleneck to achieving the country's development goals.

Expected Outcomes:
The project aimed to

- provide indigenously generated hydropower to the domestic market in Bhutan,
- reduce the extraction of fuelwood for cooking and heating,
- curtail expenditure on imported kerosene, and
- provide electricity to poor households and increase their cash incomes.

Accomplishments:
The rural electrification ratio in the country went up from 20% in 1995 to 24% in 1999. About 3,120 households in 110 villages were electrified and 567 electrification kits were provided at a minimal charge. The beneficiaries unanimously agreed that electricity has brought about an overall improvement in their quality of life. Beneficiaries began to use electrical appliances. Children benefited from extra hours available for study. Adults enhanced their literacy by attending the nonformal education program organized in the evening. Women, who previously spent much time in the kitchen, experienced a significant decrease in eye and respiratory ailments caused by excessive indoor smoke from firewood stoves and kerosene wick-lamps. Electricity boosted income-generating activities such as weaving, carpentry, carving, and tailoring. Electrically operated rice mills, flour mills, and oil mills increased supplementary income and employment opportunities. Small shops-cum-bars sprouted and still operate after dark, thereby increasing commercial activity and social interaction. Electricity gave beneficiaries security at night, bringing them peace of mind in relation to medical and other emergencies. Cases of theft, burglary, and vandalism in religious temples, monasteries, and structures decreased. Electricity has also helped to protect the harvest from wild animals. In addition, the project provided avenues for recreation and relaxation through media, such as radio and television, as well as time to associate with neighbors and relatives.

Details:
www.adb.org/Documents/PPARs/BHU/PPAR_BHU_27260.pdf

About the Asian Development Bank

ADB aims to improve the welfare of the people in the Asia and Pacific region, particularly the nearly 1.9 billion who live on less than $2 a day. Despite many success stories, the region remains home to two thirds of the world's poor. ADB is a multilateral development finance institution owned by 67 members, 48 from the region and 19 from other parts of the globe. ADB's vision is a region free of poverty. Its mission is to help its developing member countries reduce poverty and improve their quality of life.

ADB's main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance. ADB's annual lending volume is typically about $6 billion, with technical assistance usually totaling about $180 million a year.

ADB's headquarters is in Manila. It has 26 offices around the world and more than 2,000 employees from over 50 countries.

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July 2007