



ENERGY EFFICIENCY MULTI-PROJECT FINANCING IN THE PEOPLE'S REPUBLIC OF CHINA

Reducing Energy Consumption in a Rapidly Growing Economy

Workers conduct a massive retrofit of an iron plant to recapture previously wasted energy in Guangdong, PRC.

- Energy consumption in the People's Republic of China (PRC) is growing at an alarming rate, almost as fast as the country's economic growth.
- The PRC aims to address this rapid surge through energy efficiency measures. It sought the help of the Asian Development Bank (ADB) to jump-start energy efficiency projects.
- ADB introduced the concept of energy financing to the PRC through a program that provides banks partial credit guarantees and technical assistance for marketing and appraising private sector energy efficiency projects.
- The program partnered with a local commercial bank supported by technical expertise to promote energy efficiency. Workshops, training, and knowledge sharing are under way to improve the bank's capacity to identify and finance energy efficiency projects.

CONTEXT

During the last decade, energy consumption in the People's Republic of China (PRC) surged dramatically to 9.5% in 2001–2005, only slightly lower than growth in gross product.¹ This accelerated pace created a strong demand for electricity. Per capita electricity consumption increased from 993 kilowatt-hours (kWh) in 2000 to 2,650 kWh in 2008.² This has serious ramifications for the country's economy and environment as serious health issues now exist given the poor air quality resulting from burning coal for power generation and for district heating.

The government views energy efficiency as a major response to rapidly growing energy consumption. It issued policies for energy conservation, such as the Green Building Action Plan, which seeks to develop 1 billion square meters (m²) of new green building floor area by 2015, 14 times higher than the existing 69.5 million m² in 2012.³ Its 11th Five-Year Plan (2006–2011) prioritized energy conservation, high-efficiency, and energy security. It also issued the Medium and Long-Term Energy Conservation Plan, a conceptual road map for improving energy efficiency and promoting 10 types of energy efficiency projects. The plan identified the industry, transport, and building sectors as having the most potential for energy efficiency improvements. The government also revised the Energy Conservation Law and the comprehensive Energy Law (2008).⁴

However, energy efficiency projects still face several difficulties, primarily due to lack of financing and awareness. Local commercial banks are reluctant to lend funds to energy financing projects.

Energy efficiency remains an unfamiliar concept for many banks. It involves a wide range of technologies and strategies that banks perceive as risky. The banks' lack of training and information only aggravates the situation; they have not introduced or promoted any energy efficiency finance products. Even among senior management, awareness of energy financing is low, thus no resources have been provided for the introduction and implementation of energy financing schemes. In addition, banks believe that the highly technical nature of energy efficiency projects will increase the cost of due diligence. Therefore, proponents of energy efficiency projects encounter difficulty in availing loans. Even if they can borrow, the financing term is short or requires high collateral (footnote 1).

¹ Asian Development Bank (ADB). 2007. *Report and Recommendation of the President to the Board of Directors: Proposed Credit Guarantee to the People's Republic of China for the Energy Efficiency Multi-Project Financing Program*. November. Manila.

² ADB. 2010. *Project Administration Manual: Tianjin Integrated Gasification Combined Cycle Power Plant Project in the People's Republic of China*. May. Manila.

³ ADB. 2013. *People's Republic of China: Energy Efficiency Multi-Project Financing Program (Financed by the Clean Energy Fund under the Clean Energy Financing Partnership Facility)*. October. Manila.

⁴ National People's Congress of the People's Republic of China. *Law of the People's Republic of China on Energy Conservation*. Database of Laws and Regulations. www.npc.gov.cn/englishnpc/Law/2009-02/20/content_1471608.htm (accessed 25 February 2015).

PROJECT SNAPSHOT

PROGRAM APPROVAL DATE:

December 2007

PARTIAL CREDIT GUARANTEE:

Up to CNY800 million

EXECUTING AGENCY:

Commercial banks

GEOGRAPHICAL LOCATION:

People's Republic of China

TYPE OF ENERGY PROJECT:

Energy efficiency

PROJECT COMPLETION DATE:

Ongoing

Thus, the Asian Development Bank (ADB) helped mobilize available domestic funds in the PRC through the Energy Efficiency Multi-Project Financing Program, which supports investment in energy efficiency and increases awareness among commercial banks and energy end users.

SOLUTIONS

An innovative program. The program involves ADB's partnership with selected banks, providing them with up to CNY800 million⁵ in partial credit guarantees (PCGs) to develop energy financing. ADB also engaged a private sector energy management company to provide technical assistance to its partner banks. The combined forces of the two partners ensured the availability of energy financing and technical competence in assessing energy efficiency projects.

Project financing structure. Through the program, ADB will mobilize funds for energy efficiency projects by providing a PCG to each partner bank, sharing the credit risks associated with such types of projects. Partner banks will formulate agreements and frameworks that will provide borrowers and/or energy end users with increased access to finance for energy efficiency projects. Because many local banks lack technical skill in assessing such projects, the program will tap the technical skills of a private sector energy management company (Figure 4.1.1).

Clear and delineated roles. The technical partner offers comprehensive technical input to each energy efficiency project financed by a partner bank. It is responsible for sourcing projects for the partner bank, including marketing, energy audit, technical due diligence, setting the energy policy for end users, and equipment procurement. The partner bank is responsible for credit assessment, further due diligence, and loan approval.

Focus on a specific segment. ADB has long identified the PRC as a priority country with high potential for energy efficiency and clean energy investments. Through consultative meetings with stakeholders in the energy efficiency market, ADB learned that the PRC needs energy efficiency investments in a range of market segments with distinct credit characteristics and investment requirements. Given the country's limited experience in energy efficiency financing, the program initially focused on the energy efficiency of buildings to fast-track learning among banks. The huge market potential in this area matches the interests and capacity of commercial banks. Since urban areas are responsible for about 75% of all energy use and GHG emissions worldwide, focusing on energy efficiency of buildings will considerably reduce energy consumption. With the PRC's rapid urbanization, energy-efficient buildings will have a large and long-lasting cumulative impact. Retrofitting buildings with energy-saving improvements can yield up to 20%–40% energy savings.⁶

⁵ When the project was approved (December 2007), CNY1.00 was equivalent to \$0.13.

⁶ ADB. 2011. ADB Supports Shanghai Pudong Development Bank Lending for Green Buildings. News release. 16 May. Manila. <http://www.adb.org/news/adb-supports-shanghai-pudong-development-bank-lending-green-buildings>

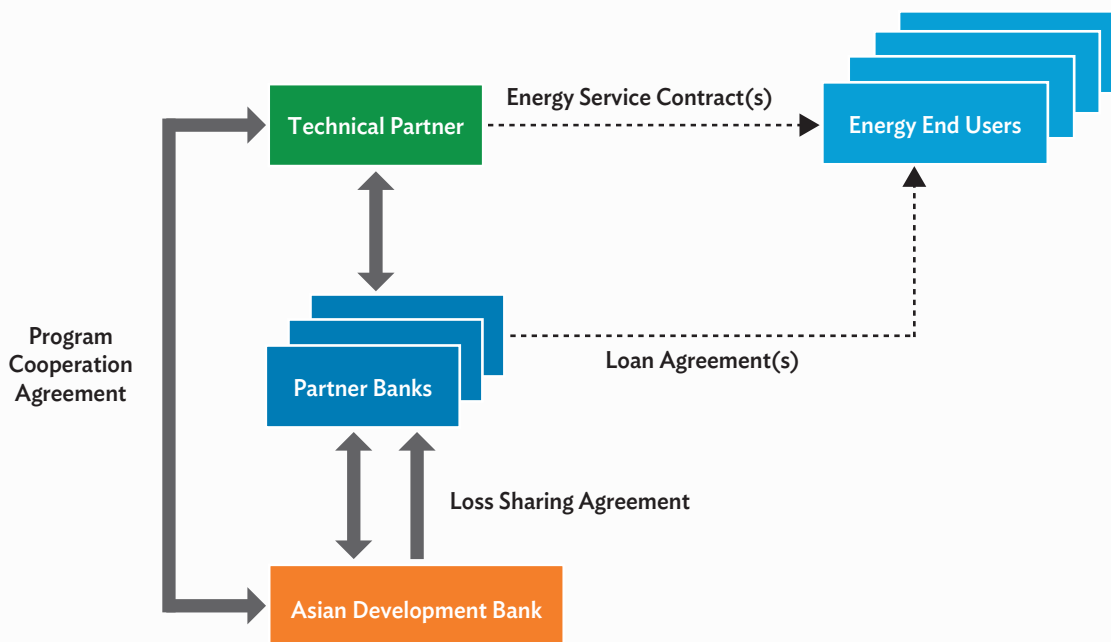


State-of-the-art LED lighting is developed in the laboratory of Guangdong Real Faith Lighting Company.

Capacity building. The program introduced a technical assistance package that focused on supporting partner banks in the structuring, credit evaluation, and monitoring of energy efficiency loans. Initiated in 2014, this technical assistance will end in 2016. Several workshops shared knowledge and promoted energy efficiency activities among stakeholders, including financial institutions, government agencies, energy end users, and technology providers. Training included sessions on energy efficiency finance for bank headquarters and main branches, covering an introduction to energy-saving technologies in buildings, the economics of energy-saving equipment, sector analysis, international best practice in structuring energy efficiency loans, assessing energy efficiency cash flows, and marketing energy efficiency financial services. Additional topics will include credit underwriting, risk assessment, and portfolio management and reporting practices. The training will also help partner banks fine-tune a special unit for this program and develop and design an incentive mechanism for end borrowers.⁷

⁷ ADB. 2013. *Technical Assistance to the People's Republic of China for the Energy Efficiency Multi-Project Financing Program* (Financed by the Clean Energy Fund under the Clean Energy Financing Partnership Facility). October. Manila.

Figure 4.1.1: Energy Efficiency Multi-Project Finance Program Structure



Source: Untitled PowerPoint presentation provided by Aiming Zhou.

RESULTS

Partnerships. The program now has the Shanghai Pudong Development Bank (SPDB) as the local bank partner, with a PCG limit of CNY300 million. Thus far, SPDB has reviewed more than 10 projects, with two approved pilot energy efficiency loans for the building sector. It also established a special credit evaluation channel, a marketing channel, and various new procedures. In partnership with ADB, SPDB has conducted various internal training workshops (footnote 6). This successful partnership is instrumental to increasing end users' access to energy efficiency loans.

A technical partner, Johnson Controls (JCI), gives partner banks much needed and ongoing technical assistance. JCI is a global leader in delivering integrated energy efficiency solutions.⁸

Increased capacity of partner bank. Training sessions for energy efficiency finance are well under way, and scheduled workshops will disseminate the lessons learned. Both trainings and workshops will be completed by 2016. Concurrently, the program has been developing a building energy efficiency manual for credit analysis and loan processing of various energy efficiency projects.

⁸ ADB. 2008. ADB, Standard Chartered Bank Promote Private Sector Investment in Energy-Efficient Projects in PRC. 3 May. News release.

Projected increase in private sector investments. The program envisions that lending for energy efficiency projects without ADB’s partial credit guarantee will reach at least CNY500 million, and guaranteed loans will exceed CNY1.8 billion by 2018. In addition, the targeted repayment rate for energy efficiency loans will exceed 95%. These investments should produce at least 500 million m² of retrofitted buildings by 2020, and 15% of new buildings will comply with the green building standard (footnote 7).

LESSONS

Flexibility in credit criteria. A major lesson from this program is the need for flexible credit criteria. Many banks have credit requirements (e.g., short payment periods and high collateral) that can hinder energy efficiency financing. For example, local banks frequently collateralize 200% of the loan amount. Others are rigid in implementing short payment periods. Flexibility will allow banks to accommodate the highly technical nature of energy efficiency projects.

Awareness and capacity for energy efficiency projects. Program implementers can help more banks accommodate energy finance projects by increasing the latter’s awareness about energy efficiency financing. Banks also need specialized credit training to readily assess and process energy efficiency projects. Systematic training will enhance energy efficiency capabilities and create better awareness among commercial banks.

Availability of technical partner. This case story demonstrates the importance of a readily available technical partner, especially during the initial phase of program implementation. A technical partner can provide training on energy efficiency finance, risk assessment, portfolio management, and reporting practices. In addition, a technical partner can actively support banks in the appraisal and risk assessment of energy efficiency projects. Thus, the technical partner can further enhance banks’ performance beyond lecture- or training-based knowledge sharing.

Keywords

Energy, energy financing, energy efficiency, energy loans, energy lending, green buildings, retrofitting, People’s Republic of China, PRC

For further reading

- <http://www.adb.org/projects/documents/proposed-credit-guarantee-energy-efficiency-multi-project-financing-program>
- <http://www.adb.org/news/adb-supports-shanghai-pudong-development-bank-lending-green-buildings>

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