Expanding Access to Energy Efficiency Finance Through the Use of Credit Guarantees
Due to its rapid economic growth, China’s burgeoning energy demand has created significant challenges to its energy security and sustainable development. In the face of this dual challenge, leaders have emphasized energy efficiency as a top priority for the country. From 1980 to 2000, China reduced its energy intensity, as measured by energy use per unit of gross domestic product, by an average rate of about 5 percent per year. It achieved these results mainly through subsidies and regulations geared towards its substantial industrial sector. However, by the early 2000s this trend had reversed due to a number of factors including: rising domestic energy consumption; a rapid increase in the production and export of energy-intensive goods; and an expansion in construction.

China worked to increase private sector investment in energy efficiency, but had limited success because financial institutions lacked experience in dealing with energy efficiency projects. Lending decisions were based mostly on the value of

Figure 1: CHUEE Program Design

asset collateral (balance sheet financing) rather than on expected project-based cash flow (project financing), which hindered the ability of energy service companies to access credit.³

In 2004, China turned to the International Finance Corporation (IFC) for help in designing a new private-sector based finance initiative for energy efficiency. This effort led to creation of the China Utility-Based Energy Efficiency Finance Program (CHUEE), a new risk-sharing mechanism meant to increase the availability of private investment for energy efficiency projects (See Figure 1). Although the program was originally expected to focus on a gas utility, the design changed due to geographic and strategic differences between the gas utility and participating banks. The design that ultimately materialized focused on large banks with industrial clients, rather than small clients supported by lending through the gas utility. It was rolled out in two phases beginning in 2006, with a third phase currently in planning. CHUEE set an initial target to reduce emissions by 8.6 million tons of carbon dioxide (CO₂) per year by 2012 under a base case scenario, which was later increased to 13.6 million tons of CO₂ per year by the end of the second phase in 2015.⁴

CHUEE IMPLEMENTED TO OVERCOME PERCEIVED RISK IN ENERGY EFFICIENCY PROJECTS

CHUEE supports the implementation of energy efficiency improvements in two major ways. First, it provides a risk-sharing facility through partial credit guarantees to local banks for qualified energy efficiency loans. Second, it provides technical assistance to relevant stakeholders including banks, energy service companies, and end-users. In addition to these two major activities, CHUEE engages in market outreach through information dissemination.

Through the first two phases of the program, the International Finance Corporation committed USD 207 million for the risk-sharing facility.⁵ This support is leveraged by a USD 16.5 million grant from the Global Environment Facility to cover the initial losses (“first loss tranche”) of the guarantee, as well as by donations from the Government of Finland (USD 4 million) and the Government of Norway (USD 3 million).⁶ The funds are used to support three major private financial institutions in China. The Industrial Bank was the first bank to participate. Its focus is on lending to large industrial corporations and has been the primary recipient of CHUEE guarantees. The Bank of Beijing and the Shanghai Pudong Development Bank also joined the pool of private investors in 2007 and 2009, respectively.

The risk-sharing facility of CHUEE guarantees commercial banks for green loans to energy service companies and end-users.⁷ These loans include efficiency projects such as power generation from gas and heat recovery, biogas production from waste, and the optimization of various industrial processes. Initially, guarantees were structured such that, for the first 10 percent of losses, the first loss tranche in a commercial bank’s guaranteed portfolio of loans, CHUEE covered 75 percent of the risk while the commercial partner covers 25 percent. For the remainder of losses, CHUEE covered 40 percent while the commercial bank covered the remaining 60 percent.⁸ The first loss tranche was restructured in 2008 such that CHUEE would cover 50 percent of the risk for the first 5 percent of losses.⁹ This change was made to increase International Finance Corporation’s involvement in the first loss tranche in order to enhance leveraging of Global Environment Facility funds for other uses. (Figure 2)

This risk-sharing structure is a departure from previous privately operated credit guarantee systems in China, which commonly covered 100 percent of the credit risk at the outset. Since the traditional guarantee system effectively negated credit risk to banks, it provided little incentive for them to undertake detailed risk analyses and
understand the nuances of the projects they supported. Consequently, most lending institutions failed to learn about innovative concepts such as energy performance contracting and project-based cash flow as collateral. CHUEE addressed this problem by requiring participating banks to take on some credit risk from the outset in order to improve their familiarity with energy efficiency project finance.

Past international experience has shown that guarantees alone are not sufficient to encourage private investment in energy efficiency. CHUEE addresses this problem by including technical assistance as a core component of its strategy. For banking institutions, assistance involves education about the financial returns of energy efficiency projects as well as training on credit risk management practices. For product and service providers and end-users, CHUEE provides assistance on a range of topics including equipment training, capacity building, project feasibility services, and decision-support.

**ENERGY EFFICIENCY PROJECTS EXPAND RAPIDLY**

In contrast with earlier credit guarantee mechanisms financed by the International Finance Corporation, guarantees have been quickly utilized by commercial banks participating with CHUEE. In less than one year from program commencement, the Industrial Bank had financed 50 loans to 35 different companies with a guaranteed loan portfolio worth about USD 60 million. Based on this success, the Financial Times nominated it for two Sustainable Banking Awards to honor its work in the sector.

By the end of 2011, CHUEE helped finance over 160 projects throughout China, resulting in about USD 700 million in loans for energy efficiency investments and leading to GHG reductions of about 18 million metric tons CO₂-equivalent per year.

**Figure 2: Risk-sharing Facility Breakdown**

These reductions already exceeded the target of 14 million metric tons CO\textsubscript{2}-equivalent set for 2015. Furthermore, since its inception, the program has not experienced a single delinquent loan or default within the guaranteed portfolio.

In addition to the CHUEE program, other government policies supporting energy efficiency measures also contributed to the rapid uptake of energy efficiency projects in China. For example, China’s state-owned banks provide direct loans for energy efficiency projects to large state-owned enterprises and public banks were banned from lending to the steel and cement industry unless the loans were for energy efficiency projects.\textsuperscript{14} These policies led to a surge of lending by the public sector banks for energy efficiency.

Despite the success of CHUEE, the program has received some criticism for failing to accommodate small to medium-sized enterprises, as had originally been intended. Although the program envisioned that over half of the loans would be in the USD 200,000 range, by 2010 these loans only accounted for about 10 percent of the total, and the actual average loan size was USD 5.7 million.\textsuperscript{15} Small to medium-sized enterprises continue to present challenges to private investors due to higher transaction costs and higher risks compared to larger firms. However, the newest phase of CHUEE is addressing this problem by developing innovative mechanisms geared towards local financial institutions with larger shares of small to medium-sized clients. These mechanisms may involve non-traditional financial partners, such as large energy service companies or property developers, which could play a role in sharing first loss risks.

CHUEE has been a valuable program to help private banks develop the institutional capacity for energy efficiency lending. In particular, a World Bank study found that private banks involved in the program became much more likely to accept project-finance based collateral than non-participating banks. Furthermore, loans with CHUEE backing had longer maturities on average than loans without backing.\textsuperscript{16} The CHUEE model has since been replicated in Philippines, and there is work of expanding the mechanism to promote water savings in addition to energy efficiency.\textsuperscript{17}

REFERENCES


4 Ibid 1. pg 19

5 Ibid 1. Pg 47.


9 Ibid 1. pg 38

10 Ibid 1.


14 Ibid 1.

15 Ibid 1. Pg X.

16 Ibid 1. Pg 33

17 Ibid 1. Pg XIV.