



China, People's Republic of: MFF: Guangdong Energy Efficiency and Environment Improvement Investment Program - Tranche 1

Project Name	MFF: Guangdong Energy Efficiency and Environment Improvement Investment Program - Tranche 1
Project Number	39653-023
Country	China, People's Republic of
Project Status	Closed
Project Type / Modality of Assistance	Loan
Source of Funding / Amount	Loan 2426-PRC: MFF: Guangdong Energy Efficiency and Environment Improvement Investment Program - Tranche 1 Ordinary capital resources US\$ 35.00 million
Strategic Agendas	Environmentally sustainable growth Inclusive economic growth
Drivers of Change	Private sector development
Sector / Subsector	Energy - Energy efficiency and conservation
Gender Equity and Mainstreaming	No gender elements
Description	The impact of the Project is to promote energy conservation in Guangdong Province using advanced technologies, and is justified in technical, economic, and financial terms. The Project will provide substantial environmental and health benefits. The environmental benefits from the Project include expected energy savings, and the emission reduction.

Project Rationale and Linkage to Country/Regional Strategy

Since 2000, the PRC's electricity use has been rapidly increasing at annual growth rate of over 13%. By 2004, serious power shortages had become persistent, and more than half of the provinces in the country had to curtail power supplies during the peak periods in summer. PRC added 231 GW of new power generation capacity in 3 years (2004 - 2006). Furthermore, approximately 80% of the electricity is produced by coal-fired power plants, generating substantial amounts of air pollutants and greenhouse gases. More than half of the cities in the country fail to meet the national ambient air quality standards. According to preliminary estimates made by the Netherlands Environmental Assessment Agency, the PRC emitted 6.2 billion tons of carbon dioxide in 2006, exceeding the United States as the world's largest producer of carbon dioxide emissions.

The GDP of Guangdong in 2005 was CNY2.24 trillion (\$280 billion) which was more than 12% of PRC's GDP and the highest among the provinces and municipalities. The annual electricity consumption (267 TWh in 2005) has been rapidly growing at nearly 15% since 2000. Since 2001, Guangdong has suffered severe power shortages. The power shortage was about 5,000 MW in the summer of 2006. Guangdong also has significant acid rain problems: in 2005, acid rain frequency was about 55%, and 18 cities covering about 85% of the areas in the province, experienced acid rain. Since 2000, most of Guangdong's large cities have an increase in the number of days a year when the ambient air quality fails to meet the national air quality standards. The power shortage and environmental problems, if not resolved quickly, would hinder the economic growth of the province.

To address the power shortage and environmental problems, both the PRC and Guangdong Provincial Governments have given the highest priority to energy efficiency. Controlling the demand side of energy will offset the need to increase supply due to increasing economic output. Based on the analysis of the ADTA part B consultants, the cumulative annual electricity savings that could be realized after 10 years of retrofitting program in Guangdong is 41.2 TWh. During the period 1998 - 2000, the Guangdong Energy Conservation Center, a provincial government agency, implemented the Electricity Conservation Fund, assisting enterprises to improve energy efficiency; it was able to achieve an energy savings of about 7.9 TWh/year, and was closed in 2006.

The energy saved by installing energy efficient equipment, in the aggregate, will reduce the need for building and burning fuel in a conventional power plant; thus the aggregation of efficient equipment is being referred to as an EPP. This IP addresses one part of demand side management (DSM), i.e., the retrofitting of existing equipment with a more energy efficient one. The collective sub-projects will produce an EPP that will help improve environmental quality as it avoids the air emissions, including greenhouse gases, associated with conventional power plants in the PRC. In the PRC's 11th Five-Year Plan, the Government has set an aggressive energy efficiency target for reducing energy consumption relative to economic growth by 20% between 2006 and 2010. Guangdong, being a relatively energy efficient province, has a target of improving energy efficiency by 16% between 2006 and 2010. The Guangdong Provincial Government (GPG) has made this EPP investment program one of its top 10 programs in the province.

GPG recognizes that the benefit from energy efficiency is a public good, but cost of implementation is high, hence it proposes to extend support to catalyze adoption of energy efficiency measures by the energy consumers. It proposes to establish a new Guangdong Energy Efficiency Fund that will promote implementation of energy efficiency sub-projects in various ways, such as, provide incentive for energy savings based on retrofitting with more efficient equipment, validation and verification of energy savings, counter-guarantee for sub-loan repayment, subsidized project management cost, and market EPP, etc. It expects this fund to be financed from various sources, such as budget allocations, multi-lateral donors, Clean Development Mechanism (CDM) revenue, etc.

Impact	Improvement of energy security and environmental conditions in Guangdong province.
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Project Outcome

Description of Outcome	Improvement in energy efficiency in industry and commercial sectors in Guangdong Province.
Progress Toward Outcome	Progress being achieved towards outcome. To be assessed upon completion.

Implementation Progress

Description of Project Outputs	EPP model established Capacity developed for promotion and assessment of energy efficiency projects ESCO sector developed in Guangdong Province
Status of Implementation Progress (Outputs, Activities, and Issues)	As of 30 September 2011, total withdrawal accounted 99% of the total loan amount of Tranche-1. Except SGIS Songshan Co., other sub-borrowers of Tranche-1 have withdrawn all of their ADB subloans.
Geographical Location	Guangdong Province

Safeguard Categories

Environment	FI
Involuntary Resettlement	C
Indigenous Peoples	C

Summary of Environmental and Social Aspects

Environmental Aspects	<p>An environmental assessment and review framework prepared for the Investment Program concludes that the Investment Program will provide an overall benefit to the environmental conditions in Guangdong. Regional air quality will improve and greenhouse gas emissions will be reduced as the need for coal-fired power will be reduced. The environmental benefits include reduction of coal use and emissions. Based on ADB's Workbook on Economic Evaluation of Environmental Impacts, the total economic value of the quantifiable environmental benefits from reduced air emissions is estimated to be about \$7.8 million over the life of tranche 1. Unquantifiable environmental benefits are also significant.</p> <p>Because the Investment Program deals with only retrofits of existing facilities at consumer sites, the potential environmental impacts are limited to disposal of the replaced electrical and mechanical equipment and appliances. Disposal will comply fully with GPG regulations to minimize any potential impacts. In accordance with ADB's Environment Policy (2002) and Environmental Assessment Guidelines (2003), the first tranche of the Investment Program is classified as FI as all the subprojects have insignificant environmental impacts.</p>
Involuntary Resettlement	<p>By including only retrofits of existing electricity consuming facilities, the Investment Program will not involve any land acquisition or resettlement. Therefore, no land acquisition or resettlement plan is needed. Negative social impacts resulting from worker layoffs are unlikely. The improvement in energy security and environmental quality under the Investment Program will benefit the poor more than the general population, as the poor are generally more vulnerable under adverse circumstances. The Investment Program will create a number of jobs in the energy efficiency service sector. In addition, it will reduce coal consumption, free up resources, and lower the risks associated with coal mining and transportation.</p>
Indigenous Peoples	Not applicable.

Stakeholder Communication, Participation, and Consultation

During Project Design	<p>Interviews and site visits have been held with a number of large electricity end-users and middle users (e.g. energy service companies and high efficiency equipment manufacturers) on the development of EPP. The NDRC, MOF, and several provincial government departments (Economic and Trade Commission, Development and Reform Commission, Finance Bureau, State Assets Supervision and Administration Commission, and Energy Conservation and Monitoring Center) have been consulted about the IP.</p>
During Project Implementation	<p>Participatory workshops with stakeholders and key Guangdong government departments will be held during project implementation to obtain feedback for refinement of IP design and implementation.</p>

Business Opportunities

Consulting Services	<p>Consulting services will be used to assist in (i) assessing EPP sub-project applications, (ii) implementing EPP sub-projects, (iii) carrying out independent measurement and verification of energy savings and demand reductions of implemented sub-projects, and (iv) seeking carbon revenues for EPP projects from CDM. Consultants were recruited according to ADB's Guidelines on the Use of Consultants.</p>
Procurement	<p>All procurement to be financed will be carried out in accordance with ADB's Procurement Guidelines for loans to financial intermediaries. The sub-borrowers (both public and private sector companies) will undertake procurement of their respective packages in accordance with established commercial practices, acceptable to ADB. The IP is designed to result in economic efficiency because the sub-borrowers will only participate as EPP contributors when the payback period of the investment is shorter than the sub-loan repayment period (and the life of the equipment installed). The EPP PMO will closely supervise the implementation to ascertain that the agreed energy efficiency sub-project is implemented and estimated energy savings are realized.</p>

Responsible Staff

Responsible ADB Officer	Liu, Xinjian
Responsible ADB Department	East Asia Department
Responsible ADB Division	PRC Resident Mission
Executing Agencies	<i>Government of Guangdong Province (GGP)</i> <i>Mr. Li Shuyuan</i> <i>li36376@yahoo.com.cn</i> <i>Guangzhou, PR China</i>

Timetable

Concept Clearance	28 Aug 2007
Fact Finding	03 Sep 2007 to 21 Sep 2007
MRM	16 Oct 2007
Approval	09 Jun 2008
Last Review Mission	-

PDS Creation Date	16 Jan 2009
Last PDS Update	08 Dec 2011

Loan 2426-PRC

Milestones					
Approval	Signing Date	Effectivity Date	Closing		
			Original	Revised	Actual
09 Jun 2008	29 Sep 2008	09 Jan 2009	31 Dec 2011	-	03 Feb 2012

Financing Plan		Loan Utilization			
	Total (Amount in US\$ million)	Date	ADB	Others	Net Percentage
Project Cost	50.00	Cumulative Contract Awards			
ADB	35.00	09 Jun 2008	0.00	0.00	0%
Counterpart	15.00	Cumulative Disbursements			
Cofinancing	0.00	09 Jun 2008	35.00	0.00	100%

Status of Covenants						
Category	Sector	Safeguards	Social	Financial	Economic	Others
Rating	-	-	-	-	Satisfactory	-

Project Page	https://www.adb.org/projects/39653-023/main
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