



## China, People's Republic of: MFF: Guangdong Energy Efficiency and Environment Improvement Investment Program - Facility Concept

Project Name	MFF: Guangdong Energy Efficiency and Environment Improvement Investment Program - Facility Concept												
Project Number	39653-013												
Country	China, People's Republic of												
Project Status	Closed												
Project Type / Modality of Assistance	Grant Loan												
Source of Funding / Amount	<table border="1"><tr><td colspan="2"><b>Grant 0109-PRC: Capacity Building for Energy Efficiency Implementation</b></td></tr><tr><td>Clean Energy Fund under the Clean Energy Financing Partnership Facility</td><td>US\$ 800,000.00</td></tr><tr><td colspan="2"><b>MFF Facility Concept 0020-PRC: MFF: Guangdong Energy Efficiency and Environment Improvement Investment Program - Facility Concept</b></td></tr><tr><td>Ordinary capital resources</td><td>US\$ 100.00 million</td></tr><tr><td colspan="2"><b>Grant 0109-PRC: Capacity Building for Energy Efficiency Implementation (Supplementary)</b></td></tr><tr><td>Climate Change Fund</td><td>US\$ 1.20 million</td></tr></table>	<b>Grant 0109-PRC: Capacity Building for Energy Efficiency Implementation</b>		Clean Energy Fund under the Clean Energy Financing Partnership Facility	US\$ 800,000.00	<b>MFF Facility Concept 0020-PRC: MFF: Guangdong Energy Efficiency and Environment Improvement Investment Program - Facility Concept</b>		Ordinary capital resources	US\$ 100.00 million	<b>Grant 0109-PRC: Capacity Building for Energy Efficiency Implementation (Supplementary)</b>		Climate Change Fund	US\$ 1.20 million
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Climate Change Fund	US\$ 1.20 million												
Strategic Agendas	Inclusive economic growth												
Drivers of Change	Private sector development												
Sector / Subsector	<b>Energy</b> - Energy efficiency and conservation												
Gender Equity and Mainstreaming	No gender elements												
Description	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	Improved energy efficiency and environmental conditions in Guangdong province.
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**Project Outcome**

Description of Outcome	The outcome will be an improvement in energy efficiency in industry and commercial sectors in Guangdong.
Progress Toward Outcome	(i) ADB loan of \$100 million was fully disbursed in three tranches. Subsequent subprojects using revolving fund have started and ongoing. (ii) The MFF investment program provided large number of small loans to SMEs for Energy Efficiency investments. (iii) Variety of guarantee mechanisms were used. No defaults in sub loan repayment occurred. and, (iv) The MFF investment program produced EPP capacity of 242.3 MW and produce annual energy savings of 1.21 TWh as od end 2013, greatly exceeding original target.

**Implementation Progress**

Description of Project Outputs	EPP model established and replicated; ESCO sector developed in Guangdong; and capacity developed for promotion and assessment of energy efficiency projects;
Status of Implementation Progress (Outputs, Activities, and Issues)	The \$100.00 million MFF investment program finally comprised 3 tranches. Tranche 1 (loan 2426-PRC) of \$35.0 million, was approved on 9 June 2008, and completed by 31 December 2011. Tranche 2 (loan 2611-PRC) of \$22.06 million was approved on 16 December 2009, and completed by 31 December 2012. The tranche 2 project was awarded best performing project by EARD in 2013. Tranche 3 (Loan 2773-PRC, last tranche) of \$42.94 million was approved on 5 September 2011, and fully completed by 31 December 2013. Grant 0109: Capacity Building for Energy Efficiency Implementation in Guangdong will be closed by April 2015.
Geographical Location	Guangdong Province

## Summary of Environmental and Social Aspects

Environmental Aspects	The Project will only conduct retrofitting on existing premises and does not have any significant environmental impact. Implementation of the Project will improve energy security and environmental quality in Guangdong. The Project Management Office (PMO) will have overall responsibility for ensuring that all applicable PRC and ADB environmental standards and procedures are followed.
Involuntary Resettlement	The Project will only conduct retrofitting on existing premises and does not involve any land acquisition. Therefore, there will not be any impact on involuntary resettlement.
Indigenous Peoples	The Project will not have any impact on indigenous people or ethnic minorities.
<b>Stakeholder Communication, Participation, and Consultation</b>	
During Project Design	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.
During Project Implementation	Under the proposed IP, ADB will provide to GPG \$100 million loan in three MFF tranches with a 15-year term including a grace period of 3 years. First tier sub-borrowers will be required to repay their loans to GPG over 5 years including a 1 year grace period (sub-loan repayment period can be changed by GFTC, in consultation with ADB, to meet the investment needs). GFTC will be able to finance several cycles of EPP sub-projects as the sub-loans are repaid during the 15-year period, thereby multiplying the benefits of the proposed ADB loan.

## Business Opportunities

Consulting Services	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 will be recruited according to ADB's Guidelines on the Use of Consultants. Procurement of consulting services will be conducted in accordance with ADB's Procurement Guidelines (2007, as amended from time to time).
Procurement	All procurement must be from ADB member countries. For procurement of goods, works and services by state-owned enterprises, procedures applicable to state-owned enterprises will be followed. For subborrowers from private sector, goods, works and services will be procured according to appropriate procedures, including: (1) reasonable prices being paid; and (2) fair canvassing when selecting supplies. Procurement procedures will be in accordance with the procurement manual prepared by GPG, acceptable in form and substance to ADB, and approved by the project steering committee.

## 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>Ms. Cao Yuying</i> <i>cyy@gdwbo.gov.cn</i> <i>Floor 11, No. 26 Cangbian Rd., Guangzhou, PRC</i>

## Timetable

Concept Clearance	28 Aug 2007
Fact Finding	03 Sep 2007 to 21 Sep 2007
MRM	16 Oct 2007
Approval	04 Jun 2008
Last Review Mission	-
PDS Creation Date	03 May 2006
Last PDS Update	13 Mar 2015

## Grant 0109-PRC

### Milestones

Approval	Signing Date	Effectivity Date	Closing		
			Original	Revised	Actual
04 Jun 2008	27 May 2009	31 Aug 2009	31 Dec 2013	31 Dec 2014	27 Apr 2015

Financing Plan		Grant Utilization			
	Total (Amount in US\$ million)	Date	ADB	Others	Net Percentage
Project Cost	2.00	Cumulative Contract Awards			
ADB	1.20	04 Jun 2008	NaN	0.80	100%
Counterpart	0.00	Cumulative Disbursements			
Cofinancing	0.80	04 Jun 2008	NaN	0.80	100%

### MFF Facility Concept 0020-PRC

Financing Plan		Loan Utilization			
	Total (Amount in US\$ million)	Date	ADB	Others	Net Percentage
Project Cost	142.00	Cumulative Contract Awards			
ADB	100.00	-	0.00	0.00	%
Counterpart	42.00	Cumulative Disbursements			
Cofinancing	0.00	-	0.00	0.00	%

Project Page <https://www.adb.org/projects/39653-013/main>

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