

OFFICE MEMORANDUM

IJ/Ali/Ken King/Dilip Ahuja/Seay L
Alex/Ai Darda/Filip

DATE: March 14, 1996

TO: Distribution

FROM: Ken Newcombe, Chief, ENVGC

EXTENSION: 36010

SUBJECT: **MARCH 28, 1996 GEFOP Meeting - PDF Block C Request**

Please find attached for your review a PDF Block C request (including draft TORs) for the China Energy Conservation Promotion Project, for consideration at the March 28, 1996 GEFOP meeting.

In addition to the PDF/TOR package, we are also attaching for your review the preliminary project proposal document, the request from the national GEF focal point, and the comments from the STAP expert consulted.

We would appreciate GEFOP feedback on both the project concept and PDF request, as input to the national project team's efforts to design well-targeted interventions which will be effective in removing barriers to energy conservation in China.

Many thanks for your attention. Please send written technical comments before the meeting, if possible.

Distribution:

Messrs./Mmes:

- I. Johnson, GEF Secretariat (Fax: 23240)
- R. Asenjo, UNDP (Fax: 212-906-6998)
- A. Djoghla, UNEP (Nairobi) (Fax: 9-011-254-2-520-825)
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cc: Messrs./Mmes. T. Johnson, K. Sierra, B. Taylor (EA2); L. Vidaeus, C. Kimes, C. Feinstein, J. Suter (ENVGC);

ENVGC ISC

PROPOSAL FOR PDF BLOCK C GRANT

Country:	People's Republic of China	
Focal Area:	Climate Change	
Project Title:	Energy Conservation Promotion Project	
Project Costs:	\$190-235 million	
Financing Plan (provisional):	GOC	\$45 million
	GEF	\$35 million
	Domestic banks	\$45-90 million
	IBRD	\$30-65 million
Requesting Agency:	The World Bank	
National Executing Agency:	State Economic and Trade Commission (SETC)	
Block:	C	
Amount of PDF Funding Requested:	\$740,000	
Co-funding:	GOC	\$745,800
	World Bank	(to be determined)
Block A Grant:	No	
Convention Ratification:	January 5, 1993	

SECTOR BACKGROUND

1. The burning of fossil fuels and other human activities are changing the balance of CO₂ and other heat-trapping gases in the atmosphere. According to scientific theory, this "greenhouse effect" has the potential to dramatically alter the earth's climate in a relatively short span of time. Energy is the largest source of greenhouse gas (GHG) emissions worldwide, and China currently accounts for 10 percent of global CO₂ emissions from energy use, behind the US (21 percent), countries of the former Soviet Union (18 percent), and Europe (21 percent). However, among countries and regions with the highest GHG emissions, only China is likely to maintain rapid rates of economic growth well into the next century and this will require a significant expansion in coal use, China's principal energy resource. Assuming the continuation of rapid economic growth in China, macroeconomic and energy modeling work from the China Greenhouse Gas Study¹ show that an aggressive program to promote energy conservation and renewable energy could limit the increase in GHG emissions between 1990 and 2020 from a threefold increase to less than twofold.

2. Recent studies² confirm that there is tremendous scope for improving the efficiency of energy use in China, and that the next 25 years will be critical in this respect since a huge amount of new capital stock will be put in place. Among the options for reducing

¹ See *China: Issues and Options in Greenhouse Gas Emissions Control, Summary Report*, joint report of the Chinese Government, UNDP, and the World Bank, December 1994, p. 33.

² *Energy Efficiency in China: Technical and Sectoral Analysis*, Subreport 3, China GHG Study, and *Energy Efficiency in China: Case Studies and Economic Analysis*, Subreport 4, China GHG Study, The World Bank, 1994.

greenhouse gases (GHGs), technical energy efficiency measures are the most cost-effective, as there are many investments where the life-cycle benefits from energy cost savings more than offset total costs. However, there are a number of barriers to the implementation of financially-sound energy conservation projects in China, including: (a) inadequate information among enterprises and financial institutions; (b) limited technology transfer; (c) project, market, and implementation risk to enterprises; (d) 'Insignificance' to the enterprise of many high-return energy efficiency projects; (e) high transaction costs for designing and implementing projects; (f) difficulties in arranging financing, and (g) institutional constraints.

3. The China Greenhouse Gas Study recommended a number of measures for overcoming the barriers to energy conservation projects in China, particularly during the current period of economic transition: (a) improved credit facilities for energy conservation investments, emphasizing financially viable investments with longer payback periods; (b) well-targeted concessional finance for demonstration of new energy-saving technologies, including those from abroad that carry substantial technical or market risk; (c) development of energy service companies which bear the risk of energy-saving investment in enterprises in return for a share of the financial return; (d) better dissemination of information on energy conservation investments, emphasizing financial benefits and targeting small enterprises, including TVEs; and (e) technical assistance and training in the area of energy conservation, including energy auditing, preinvestment analysis, and staff training.

4. China's energy conservation system is among the most extensive in the world. During the 1980s, China successfully developed a comprehensive energy conservation program, including major policy directives, procedures, regulations, technical assistance programs, and project financing initiatives. The institutional framework for energy conservation in China includes a number of specialized energy conservation units at national, provincial and county/municipal levels, operating under the State Economic and Trade Commission (SETC), and provincial and local Economic Committees. The system was quite effective under the centrally planned economic system, taking advantage of the well-established framework of industrial enterprise energy input quotas and government investment funding mechanisms for investment in state-owned enterprises. With the ongoing conversion of China's economic system to a market economy, however, the established system for promoting energy conservation must be transformed to operate more effectively in the new environment. Without timely change, many of the critical gains in capacity building achieved during the last decade and a half may be lost, especially the major gains achieved in development of technical expertise in energy conservation project work.

5. The Government recognizes the need to adapt China's energy conservation system to maximize the play of market forces, and strongly supports the development of market-based energy efficiency initiatives. Many challenges are involved, however, as many of the previous administrative measures are now becoming inapplicable. Efforts to promote energy efficiency must now be built primarily on the self-interest of enterprises, as a means

to increase enterprise profits and/or to meet environmental regulations. New and different financing approaches and mechanisms are also needed. One important mechanism introduced in industrialized market economies for accelerating energy efficiency investments has yet to be introduced in China -- contract energy management, whereby one enterprise undertakes energy efficiency investment in another, and is compensated through the value of the energy saved. Support for the introduction of market-oriented approaches is especially important at this stage when market incentives for energy conservation are increasing, but knowledge among most enterprise managers of cost-effective energy efficiency options is weak, and the institutional system in China for promoting energy conservation has little experience with market-based solutions.

PROJECT OBJECTIVES AND DESCRIPTION

6. The objective of the project is to strengthen current energy conservation programs and introduce new market-based institutional structures that would spur the adoption of energy efficient technologies and practices, particularly within Chinese industry. The project seeks to: (a) establish market-oriented companies -- Energy Management Companies (EMCs) -- to help overcome current institutional and financial barriers for disseminating energy efficient equipment and processes; and (b) help upgrade current energy conservation institutions and their mechanisms for disseminating information to policymakers and enterprises on the economic and environmental benefits of energy conservation.

DESCRIPTION OF PDF ACTIVITIES

7. Given the novel concept of the proposed project, and the lack of a track record in China with market-oriented energy conservation efforts, the PDF is needed to assist the Government in preparing the project, particularly for the development of business plans of the proposed EMCs, including the savings and verification arrangements underpinning those business plans, and the design of an improved energy efficiency information and dissemination program.

8. Specifically, the PDF would support two main activities

9. ***Establishment of Energy Management Companies.*** International and domestic expertise would support the development of new independent, profit-seeking institutions - - Energy Management Companies (EMCs) -- to contract for energy conservation with Chinese enterprises. The EMCs would be established under China's Company Law, with local shareholders providing initial equity capital. Once established, the EMCs would invest in energy conservation measures within host enterprises under contractual arrangements that would allow the EMCs to recoup their investments, plus profits, from the benefits resulting from reduced energy use.

10. Under the PDF, the EMCs will hire specialized foreign and local consultants to: (a) develop business plans; (b) design models of contractual arrangements based on current

Chinese legal practices; (c) devise financing schemes for energy efficiency improvements taking account of China's financial situation; (d) provide technical monitoring and verification procedures in light of international experience; (e) estimate more precise incremental costs of the project; and (f) provide expertise on specific technologies and/or practices that will become the core business of the EMCs.

11. ***Establishment of a Best Practices Information and Dissemination Program.*** As part of its ninth five year plan (1996-2000), the Government of China has decided to establish the National Energy Conservation Center of China (NECC) to coordinate information dissemination at the national level. Under implementation, the project would provide assistance to NECC to more effectively overcome the information barriers to cost-effective energy conservation measures, and to generally improve energy management at the enterprise level. Specifically, the project would support: (a) effective dissemination of "best practices" derived from the operation of the EMCs and other energy conservation programs, focusing particularly on the provision of financial information to enterprise management, enterprise financial planners, and the financial community in general; (b) the enhancement of analytical capacity in existing energy conservation units to properly assess the environmental and financial benefits of energy conservation projects, (c) assistance to the Government in developing effective policies, regulations and standards for promoting energy conservation under a market system, and (d) development of technical and operational guidelines for energy conservation measures with wide applicability, using the results of case studies.

12. Under the PDF, international and local expertise will be provided to (a) specify the institutional responsibilities in the flow of information and resources required, (b) design systems for the dissemination and marketing of energy conservation information, including analytical content (technical and financial), scope, and presentation, (c) design distribution mechanisms for the "best practice" cases; (d) specify the nature and scope of training required; and (e) define project and incremental costs and a specific work program for implementation.

ELIGIBILITY

13. China ratified the U.N. Framework Convention on Climate Change on January 5, 1993. The project is consistent with Operational Program #1 of the GEF Operational Strategy for climate change, where one of the long-term mitigation measures is to remove the barriers to energy conservation and energy efficiency.

NATIONAL LEVEL SUPPORT

14. A Climate Change Coordination Group, an interagency committee of five leading governmental departments, was created in February 1990 and charged with overall policy formulation on the greenhouse gas issue. A GHG abatement strategy for China has been jointly prepared by the Bank, UNDP, NEPA and State Planning Commission (SPC), with

GEF support, involving a comprehensive analysis of a full range of abatement options and their relative costs and benefits.

15. Discussions were held with SETC in December 1995, at which time the project concept was agreed upon. The SETC and Provincial Governments will be responsible for project preparation, assisted by other agencies, research units, and by experts selected by the SETC to form a Project Management Office (PMO). Under the guidance of the SETC, most of the detailed implementation work will be undertaken by the Provincial Economic Commissions (PECs) of participating provinces or municipalities, and by the pilot Energy Management Companies.

JUSTIFICATION FOR PDF GRANT

16. Given the lack of familiarity and supporting framework for ESCO-type companies in China, significant up-front preparation activities are needed for the proposed China Energy Conservation Project. Not only are the preparation activities outlined here (e.g. business plan development, model contracts, and verification procedures) critical to the viability of the project, but will also speed implementation once the GEF and IBRD components are appraised.

ITEMS TO BE FINANCED

17. The total cost of the PDF activities is calculated at US\$1.4 million of which GEF is requested to finance about half. In addition, World Bank funds will be used for supervision of preparation and appraisal of IBRD-financed aspects. PDF funds would finance:

- (a) Technical assistance for preparation of business plan for each of the EMCs, including:
 - (a) one international expert with experience in the establishment and management of a North American or European Energy Service company; (b) two international experts with experience in development and operation of performance contracts and their financial options, and in monitoring the results of energy efficiency measures respectively; (c) an international expert with experience in Chinese energy efficiency applications and practices; (d) selected experts on specific technologies and/or practices which will become the core business of the respective EMCs, and (e) Chinese experts specialized in the development of commercially oriented business in China, including legal and financial aspects. (Terms of Reference are provided in Annex 1)
- (b) Technical assistance for the preparation of the work programs under the Information and Dissemination Program, including: (a) one international expert with experience in the establishment and management of a best practice energy dissemination program, and (b) Chinese experts specialized in financial and economic analysis of energy efficiency projects (See Annex 1).

- (c) international technology and institutional assessments, including the costs of foreign travel for 12 Chinese nationals, to visit operating EMCs in Europe and North America; and
- (d) other logistics and assistance necessary for preparation of the business plans and work programs.

COST TABLES

Activity	PDF Activities (US\$)		TOTAL
	GEF	GOC	
Establishment of EMCs	500,000	486,300	986,300
Preparation of Work Program for Information Component	44,000	85,300	129,300
International Technology and Institutional Assessment	93,000	17,200	110,200
Training and workshops	103,000	157,000	260,000
TOTAL	740,000	745,800	1,485,800

Category	Expense Categories		TOTAL
	GEF	GOC	
International Consultants	400,000	0	400,000
Domestic Experts	145,000	348,500	493,500
International Technology and Institutional Assessment	93,000	17,200	110,200
Office Logistics	42,000	175,000	217,000
Training, material, workshops, and publications.	60,000	205,100	265,100
TOTAL	740,000	745,800	1,485,800

PDF OUTPUTS

18. The major outputs of the project preparation phase would be:

EMC Development Program: (a) completed business plans of the three EMCs, ready for appraisal by the World Bank and GEF, including: well-defined product lines, a marketing strategy, equipment procurement plans (standard purchase, joint venture or formal shareholder links), available contract types (guaranteed savings, shared savings, lease purchase, etc.), staffing plans and expertise required, and capital structure by EMCs according to product line; (b) completed contract arrangements between the EMCs and selected industries ready to be implemented over a minimum two year period; (c) detailed project costing; (d) trained management team on technical, legal and financial aspects related to the operation of the EMCs; and (e) detailed incremental cost definitions and estimates.

Information and Dissemination Program: (a) completed work programs, including institutional responsibilities, a marketing strategy for a best practices dissemination program, analytical content, scope and presentation, and distribution mechanisms; (b) detailed training requirements and preparation of a training program; (c) estimates of project implementation costs; and (d) exposure of Chinese decision makers to EMC practice in selected European and American countries.

EXPECTED DATE OF PREPARATION COMPLETION

19. In May 1996, detailed discussions will be held with the three EMCs and a work program for the short term (3 months) and medium term (6 to 8 months) will be agreed upon. Initial business plans, draft contracts, and project cost estimates are to be finalized by November 1996. All preparation activities will be completed prior to the Bank appraisal mission, tentatively scheduled for March 1997.

GLOBAL ENVIRONMENT FACILITY
CHINA: ENERGY CONSERVATION PROMOTION PROJECT

TERMS OF REFERENCE FOR CONSULTANTS

BACKGROUND

1. The State Economic and Trade Commission (SETC) of the People's Republic of China is preparing a project to strengthen current energy conservation programs and introduce new market-based institutional structures that would spur the adoption of energy efficient technologies and practices, particularly within Chinese industry. The project seeks to: (a) establish market-oriented companies--Energy Management Companies (EMCs)-- to help overcome current institutional and financial barriers for disseminating energy efficient equipment and processes; and (b) help upgrade current energy conservation institutions and their mechanisms for disseminating information to policymakers and enterprises on the economic and environmental benefits of energy conservation.
2. Global Environmental Facility (GEF) grant funds of about US\$35 million will be requested to finance incremental costs associated with the adaptation of the contract energy management concept to China, the establishment and start-up of three pilot EMCs, and the upgrading of the best practices dissemination program. The GEF grant, if approved, would be administered by the World Bank.
3. Given the novel project concept in supporting China's energy conservation efforts, the SETC plans to engage foreign and local consultants during the preparation period to carefully plan for project costing and all those aspects required for proper implementation of the project, particularly the development of business plans--for appraisal by the World Bank and GEF--of the soon to emerge EMCs, including the savings and verification arrangements underpinning those business plans, and design of the upgraded energy efficiency dissemination framework.

SERVICES REQUIRED

4. An international team with experience in contracting energy management, complemented by local expertise, is needed to assist Chinese provinces in: (a) the initial organization and business plan development of their Energy Management Companies (EMCs); (b) the development of initial model performance contracts for energy management that fit Chinese financial, legal, and regulatory frameworks; (c) the initial development of monitoring and verification techniques and protocols to prove energy use reductions through improved practices and use of energy efficient equipment.

5. Working together with teams of Chinese experts, international specialists will assist the Chinese EMC managers in developing and implementing a business plan; developing performance contracts for energy management, securing financing that is compatible with contracting energy management in China, contracting for the equipment and its installation, and preparing technical and financial evaluations of proposed technology applications and changes in practices in a manner compatible with contracting energy management.

6. Additional international experts, combined with local expertise, with experience in the establishment and operation of an energy efficiency Best Practice dissemination program will be needed to assist the SETC and selected provincial energy conservation centers in the design of the program to develop and disseminate information, including analytical content (technical and financial), scope, and presentation; design the distribution mechanism for the best practice cases; specify the nature and scope of training required; and define project costing and a work program for implementation.

CONSULTANT RESPONSIBILITIES

Energy Management Companies

7. The primary duties of the consultants will be to act as an expert technical resource to the SETC's project management office (PMO). A work program will be agreed upon, and specific tasks assigned by the PMO after discussion with the individual consultants involved. Specific tasks for the different consultants will include:

- (a) **Establishment and Management of EMCs.** An experienced EMC manager who has successfully established and managed a North American or European Energy Service Company. This expert, with international experience in developing EMCs, would be responsible for the business plan assistance and training of the EMC management. Review of the evolving business plans and guidance to make the EMCs profitable and sustainable will be an essential element of this team member's activities.
- (b) **Legal and Financial Aspects of Performance Contracts and EMCs.** An international EMC expert with experience in performance contracts for energy management companies and their financing options is needed. The expert should have both legal and financial expertise and must become familiar with Chinese contract law and financing practices. This team member will join with Chinese legal and financial experts in the establishment and operation of commercially-oriented enterprises in China. The international expert will assist Chinese legal advisors in working with the Chinese EMC staff to prepare financial performance contracts for energy management. An essential element of the joint team professional's activities will be reviewing and offering guidance to improve the initial contracts and financing packages.
- (c) **Monitoring and Verification of Energy Savings.** Chinese experts and an international advisor with directly related experience will assist the EMCs to develop the monitoring

and verification elements of the initial contracts. This team will work with the Chinese EMC staff on how to meter specific applications to ensure development of adequate monitoring and verification. This team will be responsible for the training of the Chinese EMC staff in monitoring and verification activities and the establishments of protocols for the specific applications in which the EMC proposes to be involved.

- (d) **Energy Efficiency Practices in China.** A team comprising both international and local energy efficiency experts with experience in Chinese energy efficiency applications and practices is needed. This team will assist the Chinese EMC management in developing technical and financial evaluation techniques for possible energy efficiency measures being considered for contracting. Guidance on possible technologies and practices that would be profitable and sustainable will be provided to the individual EMC management based on prior analysis of Chinese energy efficiency case studies and on a review of the opportunities in individual provinces. This team will provide expertise to the other consultants on the potential strengths and weaknesses of various energy efficiency measures within the Chinese context.
- (e) **Specific Technologies and Practices.** Both international and local consultants with expertise in the specific technologies and/or practices that will become the core business of an individual Chinese EMC are needed. For example, recent GEF-supported research has shown numerous applications for variable speed motor technology and improved steam traps in a variety of Chinese enterprises. The number of specific technology experts required will depend on the needs of the individual EMCs as they develop their business technology packages. It is envisioned that two short-term international experts per EMC would be required to supply specific technology expertise. These experts would help provide training to the EMC staff on use of new technology in specific applications.

Best Practices Dissemination Program

8. The primary duties of the consultants for this component will be to serve as technical resource experts to the SETC's project management office (PMO). A work program will be agreed upon, and specific tasks assigned by the PMO after discussion with the individual consultants involved. Specific tasks for the international consultants will include:

- (a) **Improved Institutional Infrastructure for Dissemination Program** An international expert with experience in the design, establishment, and operation of dissemination programs through Best Practices cases would be responsible for assisting the PMO in (a) specifying the institutional responsibilities in the flow of information and resources required; (b) designing a strategy for dissemination of information; including analytical content (technical, financial), scope, and presentation; (c) specifying the nature and scope of training required; and, (d) defining project costing and a work-program for implementation.

PROJECT SCHEDULE

9. A project development and preparation grant (PDF) is being requested from the GEF. Consideration of this request by the GEF's screening committee (GEFOP) is scheduled for March 28, 1996, or shortly thereafter. The following dates are based on GEF approval on or before that date; if a delay in approval occurs, the dates shall be altered accordingly:

April 1 - May 12	Completion and execution of Grant Agreement and engagement of key international consultants.
May 13-31	<p>First Mission to Beijing and selected provinces. Current business plans are revised; the EMCs are trained on how to organize an EMC, how to contract for and finance energy management. Detailed discussions are held with individual EMCs and a work program for the short term (3 months) and medium term (6 to 8 months) is agreed upon.</p> <p>The current Chinese information dissemination program and effective information programs in other countries are reviewed. A detailed work program is agreed upon.</p>
July 15-August 2	Review draft business plans and proposed dissemination program.
October 28-November 14	<p>Finalize initial business plans, initial contracts, project costing, and continue training as required.</p> <p>Review final information dissemination program, project costing and continue training as required</p>

10. It is expected that the international consultants will provide support to the PMO in all of the above activities.

OTHER REQUIREMENTS

11. All consultants must be prepared to spend extended periods (up to three consecutive weeks) working in China with PMO staff. All consultants will be required to provide their own portable PC-type computers, complete with word processing and spread-sheet software.

COMPENSATION

12. Specific compensation rates will be based upon negotiations between the PMO and each consultant as specified in the resulting individual contracts. The compensation will be

computed using daily rates based upon an eight hour work day and a six day work week. Compensation for travel time will be based on actual calendar days spent traveling, not including layovers.

13. Consultants will receive reimbursement for actual travel and lodging costs subject to PMO approval. Consultants will also receive a per diem allowance for each day spent on travel. This allowance will be for meals, laundry, personal phone calls, and miscellaneous subsistence expenses.

FORM OF CONTRACT

14. Attached hereto is the Form of Contract to be used in governing the execution of the Consultant's assignment (Attach Standard Ministry of Finance Terms and Conditions)

28/02 '96 15:49

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ANNEX 1

LETTER OF COUNTRY ENDORSEMENT BY
DESIGNATED OPERATIONAL FOCAL POINT

CC: SIERRA
HOPE o/R
SMURFIELD o/R

WORLD BANK DEPARTMENT
MINISTRY OF FINANCE

Sandhu, Xicheng District
Beijing 100820 People's Republic of China

MOF

中华人民共和国财政部
世界银行业务司

Feb. 27, 1996

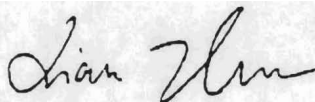
Mr. Nicholas Hope
Director, China and Mongolia Dept.
East Asia and Pacific Region
The World Bank

Dear Mr. Hope:

As you might know, the Government of China considers Energy Conservation to be a high priority in controlling GHG Emissions. Therefore, we are planning to prepare an Energy Conservation Project with GEF fund support. In order to facilitate the preparation for this project, I request to apply Block C PDF through the Bank.

I appreciate your consistent support in dealing with the Environmental Issues of China.

Sincerely Yours



Zhu Xian
Deputy Director
World Bank Department
Ministry of Finance, P.R.China

Tel: (861)8516017 Tlx: 22486 MFPRC CN Fax: (861)8522361

Opinion by Stephen Wiel

on

"GEF Project Information Document
China: Energy Conservation Promotion Project
February 28, 1996 draft and verbal comments"

Summary

My overall opinion of the China Energy Conservation Promotion Project is that it is an effective use of \$35 million of the GEF. The purpose of the project, to create an industry in China that will provide energy efficiency services with the savings shared between the energy efficiency provider and the company that is saving the energy, is an exciting one. There is a powerful need at this time to find and support new ways to keep energy efficiency alive and well in China. This project has the potential to stem a dilution-of-mission within the extensive network of energy efficiency service centers that exist throughout the country and refocus their attention to the mission of promoting energy efficiency.

The task is a formidable one. The establishment of an energy service industry and the institutional development of performance contracting is a challenge in any country. The developers of this Project Information Document appear to have considered the important elements of such an endeavor. At the same time there are a number of concerns that need to be addressed to enhance the case for the project succeeding. If the concepts and specifications stated in the Project Information Document and elaborated upon below are incorporated into the preparation of the project and subsequently into the business plans of the Energy Management Companies, the project is likely to achieve its stated goals. If it does, the savings in greenhouse gas emissions will be significant.

Global Environmental Benefits

The February 28 Draft GEF Project Information Document points out that the three demonstration Energy Management Companies (EMCs) would reduce CO₂ emissions by 207 million tons over a ten-year period yielding a GEF cost per ton-of-CO₂-reduced of US\$0.14. I was not provided the calculations that estimated these values and have not verified them. Nor do I feel a need to do so. The goal of this project is to reduce the total industrial energy consumption in China by several percent. Knowing how many percent might be comforting, but just knowing that each percent would reduce CO₂ emissions by 27 million tons annually is enough to demonstrate the potentially immense benefit from this project.

One word of caution is in order. This project is primarily institution building, and little of the benefit is likely to come in the early years, especially from the pilot phase. It is important that the early efforts to develop capable and effectively operating EMCs not be diverted in the first few years toward targeted carbon emission reduction goals.

Scientific And Technical Soundness

There is little technical risk involved in this project, as most savings will come from application of available technology to make energy consumption more efficient, primarily in industrial applications. It is unlikely that the EMCs will offer innovative new technology or otherwise undertake technically risky projects. The innovation in this project is institutional and that is where the project risk lies as will be shown below.

Institution Building and Stakeholder Involvement

The project deserves high marks for utilizing existing institutions in China -- the energy conservation service centers that the Chinese have deployed since 1981 -- and transforming them into modern energy management companies. Their continued effectiveness is threatened by the new partial "privatization" which requires they seek money from different parts of the Chinese economy to carry out their projects. If they can successfully mimic energy service companies that provide performance contracting in the industrialized nations, their financial security will be assured and their role in the Chinese economy can endure and even thrive.

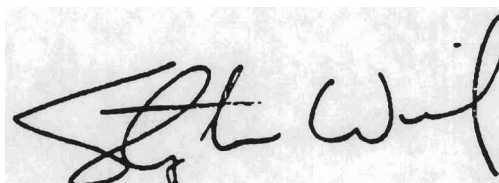
The project concept to effect this conversion is well thought out. It contains the basic elements needed for such a venture, it involves the key stakeholders in the Chinese government and economy, and it addresses the fundamental issues that might arise during the project. The following suggestions are provided for clarifying some aspects of the Project Information Document and reinforcing certain elements which are fundamental during the proposal preparation.

1. Lay out a stepwise schedule of development for the EMCs (from pilot phase through IBRD funded assistance to self sufficiency) which explicitly reflects the many years it is likely to take to iron out the numerous details necessary for an EMC to become a viable, self-supporting business.
2. Give careful consideration to establishing measures by which the success of each EMC can be judged over the multi-year course of this project.

3. Address the concept and mechanism by which risk will be shared among stakeholders in the event that an energy efficiency project being performed by one of the EMCs fails technically. The intent is to demonstrate that the industrial customer is well enough protected that it will willingly contract for the services of the EMC.
4. Acknowledge the difference between what are commonly referred to as "shared-savings contracts" and "guaranteed savings contracts" and state why, in terms of balance-of-risk and credit rating requirements, you are recommending the chosen approach.
5. Consider what involvement the China Energy Conservation Investment Corporation (CECIC) might play, if any, in the proposed project.
6. State clearly that the proposal preparation will include the establishment of the EMCs; technical and managerial staffing of the EMCs; and development of at least a 2-year business plan containing identification of reasonable product lines, model contracts and a financial plan.

Other GEF Criteria

In general, I agree with the assessments in the Draft Project Information Document of the other aspects of the project. The project is replicable as will be demonstrated in Phase 2. It is expected to induce a sizable amount of domestic counterpart funding, is consistent with Bank policy and otherwise meets the criteria of the GEF.



Stephen Wiel
March 1, 1996