



PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: Full-sized Project

THE GEF TRUST FUND

Submission Date: 09/14/2009

PART I: PROJECT IDENTIFICATION

GEF PROJECT ID¹: PROJECT DURATION: 36 months

GEF AGENCY PROJECT ID:

COUNTRY (IES): China

PROJECT TITLE: China Energy Efficiency Promotion in Industry

GEF AGENCY (IES): World Bank

OTHER EXECUTING PARTNER(S): Ministry of Industry and Information Technology (MIIT) of P. R. China

GEF FOCAL AREA (S)²: Climate Change

GEF-4 STRATEGIC PROGRAM(S): CC-SP2- Industrial EE (see preparation guidelines section on exactly what to write)

NAME OF PARENT PROGRAM/UMBRELLA PROJECT (if applicable):

INDICATIVE CALENDAR*	
Milestones	Expected Dates mm/dd/yyyy
Work Program (for FSP)	11/30/2009
CEO Endorsement/Approval	11/30/2010
Agency Approval Date	01/31/2011
Implementation Start	04/01/2011
Mid-term Evaluation (if planned)	10/01/2012
Project Closing Date	04/01/2014

* See guidelines for definition of milestones.

A. PROJECT FRAMEWORK

Project Objective: The overall objective is to improve energy efficiency and reduce greenhouse gas (GHG) emissions in key industrial sectors in China by addressing both the management and technical aspects of rational use of energy.

Project Components	Indicate whether Investment, TA, or STA ^b	Expected Outcomes	Expected Outputs	Indicative GEF Financing ^a		Indicative Co-Financing ^a		Total (\$) c = a + b
				(\$) a	%	(\$) b	%	
1. Policy Support	TA	- Policy mechanisms strengthened for promoting industrial energy conservation, management, and efficiency	- Baseline status analysis of current policies on energy efficiency promotion conducted - Policy research report and recommendation provided to the government for strengthening energy management capacity of enterprises	\$405,000	41%	\$590,000	59%	\$995,000
2. Capacity Building for Energy Manager	TA	- Training program and certification scheme for energy managerial personnel being implemented in industry sector nationwide - Energy managerial	- Training materials and energy manager certification scheme developed - Energy managerial personnel trained and certified - Training institutions	\$1,350,000	34%	\$2,600,000	66%	\$3,950,000

¹ Project ID number would be assigned by GEFSEC.

² Select only those focal areas from which GEF financing is requested.

		personnel skilled in development and implementation of measures for improving the facility's energy efficiency work and complying to Energy Conservation Law and other relevant regulation, policies, and standards - Capacity of designated training institutions enhanced in conducting training programs	selected and designated					
3. Demonstration Project Implementation	TA and Investment	- Capacity improvement of energy managerial personnel , rational use of energy, and improvements in energy performance demonstrated via pilot projects in key industries and provinces	- Demonstration projects in key industries and provinces completed - Programs for scaling-up adoption of industrial energy management proposed	\$1,615,000	9%	\$16,000,000	91%	\$17,615,000
4. Information Dissemination	TA	- Benefits of comprehensive energy management and energy efficiency best practices communicated to enterprises and end-users	- Marketing media developed - Information campaign and workshop implemented	\$350,000	36%	\$620,000	64%	\$970,000
5. Project management				\$280,000	48%	\$300,000	52%	\$580,000
Total project costs				A\$4,000,000	17%	B\$20,110,000	83%	\$24,110,000

^a List the \$ by project components. The percentage is the share of GEF and Co-financing respectively of the total amount for the component.

^b TA = Technical Assistance; STA = Scientific & Technical Analysis.

B. INDICATIVE CO-FINANCING FOR THE PROJECT BY SOURCE and by NAME (in parenthesis) if available, (\$)

Sources of Co-financing	Type of Co-financing	Project
Project Government Contribution	Estimated Grant	\$3,110,000
Project Government Contribution	Estimated Cash	\$1,000,000
GEF Agency(ies)		
Bilateral Aid Agency(ies)		
Multilateral Agency(ies)		
Private Sector	Equity Investment/Loan	\$16,000,000
Local Banks		
Others		
Total Co-financing		\$20,110,000

C. INDICATIVE FINANCING PLAN SUMMARY FOR THE PROJECT (\$)

	Previous Project Preparation Amount (a) ³	Project (b)	Total c = a + b	Agency Fee
GEF financing	\$0	\$4,000,000	\$4,000,000	\$400,000
Co-financing	\$50,000	\$20,110,000	\$20,160,000	
Total	\$50,000	\$24,110,000	\$24,160,000	\$400,000

D. GEF RESOURCES REQUESTED BY AGENCY (IES), FOCAL AREA(S) AND COUNTRY(IES)¹

GEF Agency	Focal Area	Country Name/ Global	(in \$)		
			Project (a)	Agency Fee (b) ²	Total c=a+b
The World Bank	Climate Change	China	\$4,000,000	\$400,000	\$4,400,000
(select)	(select)				
(select)	(select)				
(select)	(select)				
(select)	(select)				
(select)	(select)				
(select)	(select)				
(select)	(select)				
Total GEF Resources					

¹ No need to provide information for this table if it is a single focal area, single country and single GEF Agency project.

² Relates to the project and any previous project preparation funding that have been provided and for which no Agency fee has been requested from Trustee.

PART II: PROJECT JUSTIFICATION

A. STATE THE ISSUE, HOW THE PROJECT SEEKS TO ADDRESS IT, AND THE EXPECTED GLOBAL ENVIRONMENTAL BENEFITS TO BE DELIVERED:

China's leadership has focused on building a resource-saving society, because sustainable and strong economic growth in China over the long term is more likely if natural resources are used more efficiently. Due to China's size, its efficient use of natural resources is also critical for sustainable development globally. China is already the world's second largest energy consumer and is (or soon would be) the largest emitter of CO₂. In 2008, China's total primary energy consumption reached 2.85 billion tonnes of coal equivalent (based on National Bureau of Statistics of P.R.China report) of which more than 70% come from industry sector. Without significant gains in energy efficiency, continued economic growth at recent rates will require energy use on a massive scale—especially of coal. Over the past several years, the government has restarted policy initiatives aiming to reduce energy, wherein the industrial sector is the main focus of these efforts.

³ Include project preparation funds that were previously approved but exclude PPGs that are awaiting for approval.

Under the 11th five-year plan (FYP) to 2010, China pledged to reduce energy consumption per unit of gross domestic product (GDP) by 20 percent. The 11th FYP emphasizes that policies will be developed to promote energy saving and efficient energy utilization which include three strategies: (a) Structural – rebalancing economic structure and reducing share of energy intensive industries; (b) Technical – reducing energy consumption per unit of product, and; (c) Managerial – reducing energy waste during energy production, transportation, and consumption through strengthening regulatory and administrative institutional capacity.

In support to the energy efficiency policy and program implementation, the Energy Conservation Law was revised in April 1, 2008 to officially establish an energy conservation policy, law and regulation system. Prior to the revision, the Energy Conservation Law of the People's Republic of China was first adopted in November 1, 1997 and came into force as of January 1, 1998. The revised law is enacted with a view of promoting energy conservation in the whole society, enhancing energy utilization efficiency, protecting and improving environment, and promoting comprehensive, coordinated and sustainable economic and social development. The revised law emphasizes implementation of energy conservation target and responsibility and assessment system for key industrial enterprises.

While the government has implemented comprehensive programs on rational use of energy, the energy intensity dropped by only 1.79% in 2006, 4.04% in 2007 and 4.59% in 2008, still below the annual average required to reach the 2010 target. At the sectoral level, higher energy efficiency has been achieved in specific products. However, capital-intensive and high energy using industries continue to grow more rapidly than other parts of the economy. It is essential to put in place the policies and institutional, regulatory, technical, and capacity building framework to sustain China's efforts to transform to more energy efficient economy.

The proposed GEF project would effectively implement the China Energy Efficiency Promotion in Industry (CEEPI) project across key industrial sectors. The newly established Ministry of Industry and Information Technology (MIIT)—responsible for promoting industrial energy conservation and efficiency in China—would be the implementing state agency. While the rational use of energy is universal, sets no boundaries, and applies to any organization, the scope of this project would cover industries only—ranging from Small-Medium Enterprises (SME) to Large-Medium Enterprises (LME). The CEEPI project seeks to address the issues and barriers to the adoption of best practices on energy efficiency and reduction of GHG emissions under four components:

Component 1: Policy Support

This component would analyze the current situation in China and setup the baseline for policy guidelines and recommendations to strengthen the implementation of the revised Energy Conservation Law as well as related regulations and energy standards. Experience in many countries indicates that implementation of energy conservation law requires a complex private and public sector participation involving the government, market, and society. While the government's regulations and enforcement abilities are relatively strong in China, there are still many difficulties and challenges in the implementation of the Energy Conservation Law with regard to supervisory system, technological benchmarking, capacity building, and public awareness. The component aims to come up with policy recommendations to increase the adoption of energy management and conservation best practices in enterprises, reduce energy consumption per unit of output value, and boost investment in energy efficiency projects.

Component 2: Capacity Building for Energy Manager

This component would develop series of training materials to meet the different needs of the energy managerial personnel (or energy manager) and/or technical staff in major energy consumption enterprises, in the light of national laws, regulations, standards and requirements as well as global best practices and advanced energy saving techniques. As prescribed in the Energy Conservation Law, "Energy managerial personnel shall accept trainings on energy conservation." This component would develop standardized training programs and certification scheme for energy managerial personnel in industries, and enhance training institution capacity building.

- a. **Energy Management Training Program** – This sub-component would provide training programs on basic introduction and advanced concepts pertaining to various approaches to energy management and conservation. Energy conservation assessment tools would be developed to train plant engineers or technical specialists on energy saving audit and energy efficiency assessment. Guidelines would be

developed to analyze energy saving opportunities in general-purpose equipment and systems in major energy consuming enterprises. The training program would include study of cross-cutting technologies involving steam, motor, process heating, compressed-air systems, etc. The energy managerial personnel would be trained in areas such as, but not limited to, the following: (a) audit of facilities, equipment, processes, people, and other variables that significantly affect energy uses; (b) establishment of energy performance indicators, baseline, and benchmarks; (c) recording, monitoring, and reviewing of the identified significant energy uses on a regular basis; (c) prioritization of opportunities for improving energy performance; (d) economic and financial evaluation of energy saving opportunities.

- b. **Energy Manager Certification Scheme** – This sub-component would develop an examination procedure and certification scheme for energy managerial personnel as supplement to the training program described in Component 2a. The Energy Conservation Law prescribes that a key energy consuming entity hires energy managerial personnel (synonymous to appointment of an energy manager), responsible for (a) analyzing and evaluating the entity's energy consumption situations, (b) organizing the compilation of the entity's reports on energy utilization situations, (c) putting forward measures for improving the entity's energy conservation work, and (d) organizing the implementation of these measures. The training of energy manager provides a bottom-up approach to enhance the success of top-down policy initiatives of the government to implement energy conservation in industrial sector. Upon completion of an energy management training course and examination, the MIIT could issue a certification of qualification for an energy manager designation.
- c. **Training Institution Capacity Building** – This sub-component would also build on the current network of training institutions (existing capacity) to develop standardized training programs on energy management and administer examination for a qualified energy manager. For example, there are already Energy Conservation (or Supervision) Centers in each province or even big cities in China that are capable of implementing training programs on energy management and conservation. The China Energy Conservation Service Industry Association (EMCA) also offers a series of training courses such as introductory and advanced Energy Performance Contracting (EPC), energy audit, energy management, Measurement and Verification (M&V), etc. However, the different training institutions across the country could have their own set of training programs with varying approaches to rational use of energy. There is a need to (a) streamline a standardized energy management and conservation training program that focuses both on the management and technical aspects of rational use of energy, and (b) implement such training program nationwide with the same quality of training materials, trainers, and resources by designated training institutions—that could be at par with international standards. Thus, enterprises or energy management personnel, regardless of their locations, could share the same knowledge base and facilitate collaborative interactions on best practices on energy management and conservation.

Component 3: Demonstration Project Implementation

This component would be implemented in two phases. The first phase would select energy intensive industries such as Iron and Steel, Oil, Chemical, Electric Power, and Construction Material, and etc. (including both State-Owned Enterprises (SOEs) and non-SOEs). The objectives of the first phase are to: (a) analyze the current situation of energy management in various enterprises using a self-assessment tool; (b) provide step-by-step energy management guidance and technical assistance to the enterprises; (c) demonstrate the benefits and incentives as well as issues and challenges in implementing energy management principles and approaches; (d) document real-life experiences of enterprises in adopting energy management in their business practices. At least 20 enterprises would be recruited to voluntarily participate in setting up and implementing an energy management program. An initial training would be provided to the participating enterprises to brief them with the objectives and methodologies of the energy management program. Ideally, the group of enterprises for energy management implementation would include a good mix of small manufacturers to large multi-national corporations. This would demonstrate that regardless of the size and type of industry, energy management would be applicable to yield potential benefits and incentives. During this phase, the participating enterprises would be encouraged, but not required, to sustain the energy management system and eventually implement energy efficiency projects. The first phase would focus on gauging the energy management needs of enterprises, demonstrating the implementation issues, and assessing the strategies for success. Different enterprises would require varying

amount of support and assistance for successful implementation of energy management program. The first phase would culminate with a final assessment of the participating enterprises to (a) determine the level of their progress and challenges in implementing energy management, and (b) assess any differences in the ability of small and large enterprises to apply energy management principles and approaches. A forum would be conducted to share results and learn from the experiences of the participating enterprises.

The second phase of the demonstration project would further advance the implementation of energy management program in five or more selected enterprises. Due to costs constraints, manpower shortages, and production priorities, it is anticipated that not all enterprises selected during the first phase would proceed to full-scale implementation of a comprehensive energy management program. For the selected enterprises in the second phase of the project, technical assistance would be provided to develop comprehensive manuals, policies, and/or procedures for establishing energy management system that are customized to the needs of the participating enterprises. Practical methods would be discussed in the manual to encompass all aspects of energy management program requirements: general requirements, management responsibility, energy policy, target setting, energy manual, documentation, purchasing, monitoring and measurement, corrective action, etc. The documentation, describing the core elements of the energy management program, would include, but not limited to: (a) energy policy statement; (b) energy objectives and targets; (c) plans for achieving the energy goals and targets; (d) documented procedures to ensure the effective planning, operation, and control of significant energy-related processes and equipment. Energy audit would be conducted in the enterprises to identify and implement energy efficiency solutions and investment projects, according to the cost, benefit, and affordability. Depending on funding availability, incentives could be provided to cover the cost of the energy audit. However, the cost of the investment projects would be entirely financed by the enterprises through internal financing or other funding sources available in the market. The end-result of the second phase is a well-functioning energy management system established in the participating enterprises to demonstrate the full cycle of practical and innovative approach for continual improvement and compliance to Energy Conservation Law.

Component 4: Information Dissemination

This component would design a promotion and awareness building mechanism which would focus heavily, though not exclusively, on appropriate government departments (particularly the MIIT) and industry trade associations to send the message out to the enterprises as well as to begin the process of influencing government policy to support the rational use of energy. Both international and Chinese best practices and case studies would be collected and disseminated through educational materials or seminars targeting different groups of enterprises, with the intention to demonstrate financial and environmental benefits that could be realized by adopting rational use of energy in China. A series of workshops could be organized for the government officials, and energy managers and technical staff from those industries to discuss the results of the demonstration projects in Component 3 and next steps for follow-up projects.

The global environment benefits from the CEEPI project include increase in energy efficiency and reduction of GHG emissions within multiple industrial sub-sectors. The project would provide mechanisms for continual improvement of energy efficiency and energy performance, and reduction of environmental impacts. Moreover, the project would assist in equipping industries with practical approach to develop energy policy, establish objectives and processes, take action as needed for improving its energy performance, and incorporate a culture of energy management into day-to-day business operations. Additional benefits for industries include reduced energy intensity, controlled energy costs, and improved operations and maintenance.

B. DESCRIBE THE CONSISTENCY OF THE PROJECT WITH NATIONAL/REGIONAL PRIORITIES/PLANS:

The 11th FYP for Economic and Social Development (2006-2010) endorsed by the People's Congress in March 2006 incorporates major objectives for energy conservation, including: (a) increase overall energy efficiency in major industries for which the unit output of energy use will reach, or be close to, the leading level in the world at the time of early 21st century; (b) build robust energy conservation systems including supportive laws and standards, policies, technical service, inspection and management, which are compatible and consistent with the socialist market economy, and; (c) emphasize a new, market-oriented growth model that is more energy efficient and environmentally friendly. Responsibility contracts for achieving specific and quantified energy savings, monitored annually, have been established top-to-bottom through

China's government hierarchy, and with all major energy consumers. Several prominent energy conservation programs include: (a) the 1000 Large Industrial Enterprises Energy Conservation Action Plan, to develop and implement specific energy conservation programs in the top 1,008 largest industrial energy consumers, accounting for about 30 percent of China's total primary energy consumption; (b) a set of programs to encourage a structural shift in industry away from energy-intensity, including efforts to adjust fiscal policy towards export-oriented energy-intensive industry, major programs to restructure or close backward energy-intensive plants; (c) establishment of special energy efficiency funds to provide additional incentives for energy conservation investment, and (d) 10 Key Energy Conservation Projects, covering major energy efficiency technologies in manufacturing, transportation, commercial and residential buildings, and public facilities.

C. DESCRIBE THE CONSISTENCY OF THE PROJECT WITH GEF STRATEGIES AND STRATEGIC PROGRAMS:

The proposed Project is fully consistent with the GEF 4 Climate Change Focal Area Strategic Objective 2 to promote energy efficient technologies and practices in industrial production and manufacturing processes; and Strategic Objective 1 to promote energy efficient technologies and practices in appliances and buildings.

D. JUSTIFY THE TYPE OF FINANCING SUPPORT PROVIDED WITH THE GEF RESOURCES:

The GEF funding would provide funding to meet incremental costs of activities to achieve global environment objectives in the focal area of climate change. The GEF project would be part of a holistic national plan to address future national energy security and environmental degradation as well as climate change. The financing support is in accordance with GEF strategic priority to build technical, human, and institutional capacity as a foundation to conservation and sustainable use of energy.

E. OUTLINE THE COORDINATION WITH OTHER RELATED INITIATIVES:

The World Bank (WB) has been implementing other related initiatives in China. The CEEPI project would build on the results of these past and on-going GEF initiatives by strengthening the capabilities of enterprises, on the national level, to scale-up the adoption of energy efficiency projects through industrial energy management. Two GEF-supported projects, i.e. China Energy Conservation Project Phase I & II have been successfully implemented since 1998 to expand domestic investment in energy efficiency projects through the aggressive development of China's nascent Energy Management Company (EMC) industry (also called Energy Service Company or ESCO). Phase I & II of the project have achieved large-scale energy efficiency improvements and associated GHG reductions, targeting small and medium sized energy efficiency projects in China. Institutionally, the projects focused on policy formulation, capacity building, and information dissemination at the national level. Specifically, Phase II of the project has built the capacity of EMCA both as a training institution and focal point for the growing ESCO industry in China. Another project, namely the China Energy Efficiency Financing (CHEEF) Project (also with Phase I & II), has been implemented to strengthen the energy efficiency lending capabilities of domestic banks and reduce barriers for large industries—particularly the top 1000 national enterprises—to invest in energy efficiency projects. It also aims to strengthen the national government's capacity to enforce related laws, regulations, and standards. A complementary project from the International Finance Corporation (IFC) is the China Utility-Based Energy Efficiency Finance program (CHUEE), which is also supported by GEF. CHUEE I, with a follow-up phase II, supports marketing, development and equipment financing services to energy users in the commercial, industrial, institutional and multi-family residential sectors to implement energy efficiency projects in China. CHUEE brings together financial institutions, utility companies, and suppliers of energy efficiency equipment. The CEEPI project would build on the results of these past and on-going GEF initiatives by reinforcing the capabilities of enterprises to identify, finance, implement, and monitor energy efficiency projects through rational use of energy in industry.

Another relevant GEF funded on-going initiative is the China End Use Energy Efficiency Programme (EUEEP) which has been implemented by the United Nations Development Programme (UNDP). EUEEP is designed to support the first phase of a 4-phase, 12-year government strategic plan aimed to significantly improve the efficiency of the major end-use sectors, i.e. industry and buildings. The first phase of the project started on June 2005 and is expected to end on July 2009. Expected achievements from EUEEP include: (a) strengthen energy conservation standards and regulations; (b) develop the energy conservation market and strengthen the roles of relevant stakeholders; (c) revise China's Energy Conservation Law; (d) build capacity of China's energy conservation management system, including decision-making and administrative capacity of energy conservation centers, and; (e) reduce carbon emissions.

The CEEPI project would also capitalize on existing national and/or compatible international energy management standards. The China Standardization Center (CSC) has been authorized by the Chinese government to develop a series of national energy management standards: (a) Management System for Energy Requirements; (b) Management System for Energy Guidelines for Performance; (c) Management System for Energy Guidelines for Auditing. The Standardization Administration of the People's Republic of China (SAC) represents China in the International Working Group for developing an international standard for energy, i.e. ISO 50001 through the International Organization for Standardization (ISO). ISO 50001 specifies the requirements for an energy management system, which enable an organization to take a systematic approach to the continual improvement of energy efficiency and energy performance. The United Nations Industrial Development Organization (UNIDO) has spearheaded a meeting of experts, including representatives from the ISO and nations that have adopted energy management standards—to undertake work on an international energy management standard.

With regard to the implementation scheme, the CEEPI project would establish a coordination mechanism through CSC and MIIT with other relevant initiatives, both on-going and in the pipeline. Firstly, the project would establish a working group under the coordination of the Energy Conservation and Comprehensive Utilization Department within MIIT. The working group would consist of initial stakeholders from relevant projects and institutions. Secondly, the project would create a website. Thirdly, again under the coordination of the Energy Conservation and Comprehensive Utilization Department within MIIT, the project would seek to develop policy measures to promote cross-project result dissemination.

F. DISCUSS THE VALUE-ADDED OF GEF INVOLVEMENT IN THE PROJECT DEMONSTRATED THROUGH INCREMENTAL REASONING :

Although many large enterprises (or even provinces) in the China have developed their own energy management initiatives, many enterprises, specially SMEs, still lack the knowledge and capacity to implement energy management and conservation practices without technical assistance. Without the proposed project, it is likely that investments in change-out of industrial plant and equipment leading to increased energy end-use efficiency would continue to proceed at the current slow pace. Energy efficiency improvement arising from such investment would be incidental to the primary purpose of increased production. This could be attributed to the following factors: (a) inability of (financial) managers to understand the importance of energy efficiency's cost savings potential; (b) current orientation to least-cost capital stock purchase; (c) lack of demonstration projects and information dissemination; (d) lack of central/regional coordination; (e) significant direct/indirect subsidies to fossil-based power generation; (f) unstable business climate.

The GEF project would add value and catalytic effect by providing assistance in the promulgation of rational use of energy in the China, and building capacity of enterprises and institutions to comply with Energy Conservation Law. Furthermore, it would share international experiences from other countries where energy management systems have successfully been implemented. The institutional capacity developed and the policy framework instituted through the GEF project would be available to foster sustainable mechanisms for energy efficiency improvement in the long term.

G. INDICATE RISKS, INCLUDING CLIMATE CHANGE RISKS, THAT MIGHT PREVENT THE PROJECT OBJECTIVE(S) FROM BEING ACHIEVED, AND IF POSSIBLE INCLUDING RISK MITIGATION MEASURES THAT WOULD BE TAKEN:

A major challenge facing the project is the risk associated with the replication and scaling up of the proposed approach leading to a substantial impact. Another difficult task is facilitating cooperative relationships at the public and private sectors. The development and selection of a robust demonstration projects would be the key focus to establish project viability and ensure high replication potential of energy management programs. As described in Pat II-A, the four project components are well-designed to address the issues and barriers to the adoption of best practices on energy efficiency and reduction of GHG emissions. The implementation risks could be further mitigated by close cooperation with in-country partners in both participating municipalities and with professional organizations in the areas of energy efficiency and industry. A thorough stakeholder consultation process would be conducted in the context of finalizing the scope of the project during the implementation of the project preparation activities.

A well-functioning energy management program could be a risk management strategy in itself to mitigate the uncertain energy future, and manage scarce energy resources and volatile prices faced by enterprises. The more energy the enterprises consume the greater risk that the energy price increases or supply shortages could seriously affect their profitability or business operations. Enterprises could reduce this risk by being in command of energy use and demand, and making them more predictable and manageable.

H. DESCRIBE, IF POSSIBLE, THE EXPECTED COST-EFFECTIVENESS OF THE PROJECT:

The rational use of energy by supporting the Energy Conservation Law is one of the most cost effective ways to improve energy efficiency and address global climate change. Industrial energy management offers the potential for considerable savings in energy, avoided CO₂ emissions and expenditures on the part of industrial companies, at a relatively low-level of investment cost. It is estimated that the catalytic effect of the project would reduce CO₂ emissions by approximately or up to 25 million tons (equivalent to about 9.9 million tce in energy savings). There are three main approaches in estimating the GHG reductions: top-down, bottom-up, and both (combination). At this stage, the top-down approach was used by looking at the macro level and analyzing the total energy consumption of the industrial sector as a whole. The impacts of the proposed intervention could be then estimated over the period of project implementation. Detailed cost-benefit analysis and resulting GHG emission reduction—using a combination of top-down and bottom-up approaches—would be calculated during project implementation.

The promulgation and promotion of energy management along with capacity building of enterprises and institutions would be very cost-effective in transforming the industrial energy efficiency markets. This combination of supply and demand side activities would be sustainable in the long run. The proposed GEF project would take a strategic approach for addressing awareness, attitudes, and behavior in private sector industrial facilities through three targeted actions: (a) national program to implement CEEPI; (b) stimulation of market demand for energy efficiency goods and service; (c) capacity building for energy management, including systems optimization, in industry and the supply chain.

On the enterprise level, the cost of continual improvement framework to manage energy resources far exceeds the expenditures attributed to wasteful energy practices. Oftentimes, the behavioral aspects of saving energy, e.g. top management commitment, employee energy-awareness program, etc could yield substantial benefits with minimal capital outlay. Enterprises with solid energy management system has the competitive advantage of (a) analyzing energy consumption data, (b) finding opportunities to save energy, (c) taking action to implement the best opportunities, and (d) tracking progress to monitor the success energy-saving efforts. Once the energy management practices are embedded in an enterprise, its cost-effectiveness could be sustained repeatedly in the long run, since it creates a never-ending cycle of continuous improvement.

I. JUSTIFY THE COMPARATIVE ADVANTAGE OF GEF AGENCY:

The World Bank is a leading international financial institution with strong experience in packaging investment projects focusing on institution building, infrastructure development, policy reform, and market transformation across all the focal areas of the GEF. Since GEF's inception in 1991 and formal establishment in 1994, the Bank has an extensive portfolio of energy efficiency projects which have been generally satisfactory. Key World Bank GEF projects were implemented in China, India, Thailand, Romania, Lithuania, and Croatia. In China, there has been a close working relationship between the government and the World Bank since GEF's establishment. The World Bank has an excellent team of experts specializing in conceptualization, development, implementation, and monitoring of energy efficiency projects.

PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):

(Please attach the country endorsement letter(s) or regional endorsement letter(s) with this template).

NAME	POSITION	MINISTRY	DATE (Month, day, year)
LIU, Fangyu	Director	Ministry of Finance International Financial Institution Division III Department of International Affairs Government of P.R. China	

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF policies and procedures and meets the GEF criteria for project identification and preparation.

Agency Coordinator, Agency name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address
Steve Gorman, WB GEF Executive Coordinator			Jiang Ru	(202) 473- 8677	jru@worldbank.org