PROJECT IDENTIFICATION FORM (PIF) [1]

PROJECT TYPE: Full-sized Project
TYPE OF TRUST FUND:GEF Trust Fund

PART I: PROJECT IDENTIFICATION

Project Title:	Hebei Energy Efficiency Improvement and Emission Reduction Project		
Country(ies):	People's Republic of China	GEF Project ID:[2]	4621
GEF Agency(ies):	AsDB (select) (select)	GEF Agency Project ID:	
Other Executing Partner(s):	Hebei Provincial Government	Submission Date:	09/15/2011
GEF Focal Area (s):	Climate Change	Project Duration (Months)	36
Name of parent program (if applicable): ➢ For SFM/REDD+ ☐		Agency Fee ($):	363,636

A. FOCAL AREA STRATEGY FRAMEWORK[3]:

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Indicative Grant Amount ($)	Indicative Co-financing ($)
CCM-2 (select)	2.1 - Appropriate policy, legal and institutional frameworks adopted and enforced	2.1 - New and improved policies and regulations implemented and operational for promoting increased energy efficiency investments	GEFTF	500,000	200,000
CCM-2 (select)	2.2 - Sustainable financing mechanisms established and operational	2.2 - Volume of investment mobilized -- $180 million of fiancing leveraged by Asian Development Bank (ADB) credit line and $820 million in indirectly through the capacity building activities and technology dissimination activities during 2012 - 2015.	GEFTF	2,963,203	179,300,000
CCM-2 (select)	2.3 - Greenhouse gas (GHG) emissions avoided	2.3 - Emission savings of 760,000 tons of CO2 (MtCO2) equivalent per annum or about 15.2 million tons lifetime (20 years) from the investments using the ADB credit line, and an additional 3.28 million tons of CO2 equivalent per annum or about 65.6 million tons lifetime (20 years) from investment projects leveraged by the GEF support.	(select)		
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)			(select)		

[1] It is very important to consult the PIF preparation guidelines when completing this template.
[2] Project ID number will be assigned by GEFSEC.
[3] Refer to the reference attached on the Focal Area Results Framework when filling up the table in item A.

(select) (select)			(select)		
(select) (select)	Others		(select)		
Sub-Total				3,463,203	179,500,000
Project Management Cost[4]			GEFTF	**173,160**	9,500,000
Total Project Cost				3,636,363	189,000,000

B. PROJECT FRAMEWORK

Project Objective: Reduce GHG emissions through building capacity of ESCOs, banks and M&V agents to mobilze financing for energy effieicny and emission reduction projects						
Project Component	**Grant Type**	**Expected Outcomes**	**Expected Outputs**	**Trust Fund**	**Indicative Grant Amount ($)**	**Indicative Cofinancing ($)**
1. Energy efficiency and emission reduction (EE&ER) technology identification and dissemination, and design of market-based incentives	TA	(i) Identification and dissemination of new and innovative energy efficiency technologies and incentive mechanisms for deployment of these technologies in industries in Hebei (ii) Adaptation of market-based policy incentives to promote energy efficiency in Hebei Province (iii) Capacity building and development of knowledge portal for monitoring, tracking and information management of progress towards Hebei's energy intensity reduction targets	(i) Identification of leading edge energy efficiecny improvement technolgies applicable to energy-intensive industries in Hebei Province (ii) Recommendations on policy incentives to facilitate transfer of technologies identified (iii) Recommendations on market-based incentives for energy efficiency improvement (iv) Recommendations on fiscal incentives to promote commercial bank lending to energy efficiency including risk sharing with commerical banks for EE lending (v) Capacity building on policy makers in the government on innovative policy incentives for EE improvement (vi) Establsihing an information dessimination platform to provide information on state of the art technologies applicable in Hebei Province and actively promote these technologies among the industries (viii) Establishing EE monitoirng, supervion data	GEFTF	500,000	200,000

[4] GEF will finance management cost that is solely linked to GEF financing of the project.

			base to provide upto date data on energy consumption and energy savings achieved by key industries			
2. Supporting ESCO industry and M&V agents in Hebei	TA	(i) Well trained ESCO industry in Hebei capable of implementing EE&ER projects (ii) Increased number of ESCO projects implemented and investments mobilized by ESCOs in Hebei province (ii) Increased institutional capacity for conducting third party M&V for EE&ER projects in Hebei	(i) Training and capacity building modules for ESCOs (ii) Guidelines for managing an ESCO business, including energy auditing, project development, financing and implementation (iii) Comprehensive training and capacity building workshops for ESCOs (iv) Collaborative workshops for ESCOs, banks and industrial energy users to increase bank financing of ESCO projects in industry (v) Guidelines for establishing accreditation mechanism for third party MRV entities that may also undertake certification for ISO 50001 (vi) Establishment of an organization to train and certify MRV professionals and developing an operation manual	GEFTF	500,000	150,000
3. Capacity building of banks and industrial firms to increase bank financing of energy efficiency projects	TA	(i) Increased interest and capacity of financial institutions to finance industrial EE&ER projects in Hebei (ii) Increased understanding by industrial energy users on preparing bankable EE project proposals (iii) Significant increase in commercial bank financing of energy efficiency investments	(i) Training and capacity building modules for financial institutions (ii) Guidelines for EE&ER project appraisal and identification of new and innovative financial products for EE&ER projects (iii) Comprehensive training and capacity building worskshops for bank staff on credit appraisal and and technical due diligence on energy efficiency projects in the	GEFTF	500,000	150,000

		in Hebei Province.	industrial sector. (iv) Preparing operating procedures for partial credit guarantees to be provided to energy efficiency projects implemented by ESCOs. (v) Training workshops for industrial energy users on preparation of bankable EE project proposals (vi) Industrial energy management and implementation of ISO 50001			
4. Mobilizing Finaning for Demonstration Energy Efficiency Projects	Inv	(i) Successful implementation of nine demonstration energy efficiency projects including an ESCO projects to achieve energy savings of 297,000 mtce and CO2 savings of approxmiately 760,000 tons (ii) Establishing a revolving escrow fund to revolve the repayment of EE loans made to initial set of nine subprojects (iii) Demonstrating state of the art industrial energy efficiency projects. (iv) Establishing a guarantee fund to provide partial credit guarantees to energy efficiency projects implemented by ESCOs	(i) Loans provided for industrial energy efficiency subprojects using ADB credit line and cofinancing from industrial enterprises and local banks (ii) Preparation of detailed engineering desgins for industrial energy efficiency projects using state of the art technologies. (iii) Pilot testing the guarantee facility for providing partial credit guarantees to energy efficiecny project implemented by ESCOs.	GEFTF	1,963,203	179,000,000
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
			Sub-Total		3,463,203	179,500,000

Project Management Cost[5]	(select)	173,160	9,500,000
Total Project Costs		3,636,363	189,000,000

C. INDICATIVE CO-FINANCING FOR THE PROJECT BY SOURCE AND BY NAME IF AVAILABLE, ($)

Sources of Cofinancing	Name of Cofinancier	Type of Cofinancing	Amount ($)
Other Multilateral Agency (ies)	Asian Development Bank	Hard Loan	100,000,000
Local Government	Hebei Provincial Government	Grant	10,000,000
Private Sector	Subproject Proponents	Grant	60,000,000
Private Sector	Banks in Hebei	Grant	19,000,000
(select)		(select)	
(select)		(select)	
(select)		(select)	
(select)		(select)	
(select)		(select)	
(select)		(select)	
Total Cofinancing			189,000,000

D. GEF/LDCF/SCCF RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY[1]

GEF Agency	Type of Trust Fund	Focal Area	Country Name/Global	Grant Amount (a)	Agency Fee (b)[2]	Total c=a+b
AsDB	GEF TF	Climate Change	People's Republic of China	3,636,364	363,636	4,000,000
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
Total Grant Resources				3,636,364	363,636	4,000,000

[1] In case of a single focal area, single country, single GEF Agency project, and single trust fund project, no need to provide information for this table

[2] Please indicate fees related to this project.

[5] Same as footnote #3.

PART II: PROJECT JUSTIFICATION

A. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:

A.1.1 the GEF focal area/LDCF/SCCF strategies:

The proposed project is fully consistent with the GEF 5 Climate Change Focal Area Strategic Objective 2 to "promote market transformation for energy efficiency in the industrial and buildings sectors."

A.1.2. For projects funded from LDCF/SCCF: the LDCF/SCF eligibility criteria and priorities:

N/A

A.2. national strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NAPs, NBSAPs, national communications, TNAs, NIPs, PRSPs, NPFE, etc.:

This project is consistent with the national strategy of the People's Republic of China (PRC) with respect to improvement of energy efficiency in the 12th Five-Year Plan and its Medium- and Long-Term Energy Development Plan, covering the period up to 2020. Under this plan, energy efficiency improvement is made the top priority of PRC's energy strategy as means of ensuring security and mitigating global warming and improving local envionrtment. As an important and integral part of the energy development plan, the PRC government approved its Medium- and Long-Term Energy Conservation Plan in November of 2004, which outlined the major tasks, key areas, and strategic projects for energy efficiency improvements until 2020.

The PRC's 11th Five-Year Plan (2006-2010) led to significant improvement in energy efficiency in most of the PRC's provinces, and in the 12th Five-Year Plan (2011–2015) aggressive targets have been established for further improvement. Hebei Province has an aggressive target of 17% for energy intensity reduction between 2011 and 2015. This project will directly provide assistance to the provincial government of Hebei to make progress towards this ambitious target by developing financial and implementation frameworks to help scale-up energy efficiency projects and by building institutional capacity among key stakeholders, including provincial government agencies, industrial and other large energy users, energy services providers (including ESCOs), financial institutions, and measurement, reporting and verification (MRV) agents.

PROJECT OVERVIEW:

B.1. Describe the baseline project and the problem that it seeks to address:

Energy Use and GHG Emissions in the PRC

PRC is now the world's largest energy consuming nation and also the largest emitter of global GHG emissions. The total demand for energy and the GHG emissions are growing at a rapid rate to support PRC's continuing remarkable economic growth. The primary energy demand in PRC increased by over 100% in less than 10 years to exceed 2,920 million tons of coal equivalent (mtce) in 2009, from 1,390 mtce in 2000. Meanwhile, the gross domestic product (GDP) more than tripled from CNY9,920 billion in 2000 to CNY 34,050 billion in 2009.

About 75% of PRC's primary energy supply is sourced from coal and more than 50% of its energy consumption occurs in the industrial sector. If economic growth continues at the projected rate of 7.2% per annum, PRC's total consumption would grow to over 12,000 Mtce by 2030, leading to massive increases in coal consumption and substantial increases in related GHG emissions. The Government of PRC has recognized the challenges posed by continuing increases in energy consumption and GHG emissions, and has made a national commitment to a less energy-intensive development path.

Changes in Energy Intensity

Between 2000 and 2005, the PRC's energy intensity increased slightly from 1.47 tce per CNY10,000 GDP in 2000 to 1.49 tce per CNY10,000 GDP in 2005, (constant 2000 prices). Recognizing the need for reducing the growth in energy use and GHG emissions, the PRC government made unprecedented efforts to improve energy efficiency of its economy by setting specific targets in the 11th Five-Year Plan, which was initiated in 2006. To reinforce these efforts, PRC's Energy Conservation Law was revised in 2007 to more clearly define responsibilities and accountabilities and lay the foundation for many new programs. PRC has since launched a set of energy conservation policies, regulations, and programs that cover all aspects of the economy.

The results of the 11th Five-Year Plan led to a decrease in energy intensity of the country from 1.28 tce per CNY10,000 GDP in 2005 (adjusted to 2005 constant prices) to 1.08 tce per CNY10,000 GDP in 2009. The energy intensity in 2010 was reported to be 1.034. The cumulative reduction in energy intensity over the 11th Five-Year Plan was approximately 19.06% by 2010, which fell somewhat short of the target of 20% but was nevertheless an important achievement. The reduction in national energy intensity was supported by new legal and regulatory foundations, design and implementation experience in a large number of major programs, capacity building at all levels.

Energy Conservation Programs in 12th FYP and Beyond.

In 2009, the government expressed its desire to reduce the carbon intensity of GDP by 40%–45% by 2020 compared to 2005 as part of PRC's contribution to mitigate the global GHG emissions. It is expected that the 12th Five-Year Plan would set a target to improve the energy intensity of GDP by further 16% during 2011–2015. Achievement of this objective will require sustained efforts to reduce energy intensity in the economy and increase the share of non fossil fuels in the energy mix. In addition, emission reduction objectives for the 12th Five-Year Plan include 8% reduction in sulphur dioxide emission in absolute terms. (i.e. from 2.208 Mt to 2.031 Mt and nitrogen oxide from 2.157 Mt to 1.941 Mt). These national targets stem from a strong recognition by PRC's leadership that more efficient use of natural resources is essential for PRC to achieve its long-term development goals. Because of PRC's size, it also is important for the world as a whole.

A key effort towards achieving these targets is energy efficiency improvement. According to National Development and Reform Commission (NDRC), the central government has planned to invest a total

of CNY 832 billion for energy saving programs during the period 2011 to 2015. These investments will focus in five priority areas, called Five Key Projects, which include: (i) retrofit, (ii) industrial technology demonstration, (iii) promotion of energy management contracts, (iv) energy saving consumer products, and (v) capacity building.

Since industry continues to be the largest energy using sector, the responsibility for energy intensity reduction falls on major energy consuming enterprises. The energy intensity reductions at industrial enterprises will be enhanced by extending the national "1,000 Enterprises Program" to all industrial enterprises with annual energy consumption of 10,000 tce/yr, which is expected to set specific energy saving targets for some 16,000 enterprises in the country, primarily among nine energy-intensive industrial sectors, including iron and steel, nonferrous metal, coal, power generation, petroleum chemicals, chemicals, building materials, textile, and pulp and paper.

Justification for Selecting Hebei for This Project

The responsibility for the implementation of the energy efficiency targets has been assigned by the government to the provincial level. The provincial governments have accepted the central government's mandated targets, but have to work out the details of the implementation strategies through studies and analysis to translate the targets into sector specific programs and to design specific policies and measures adapted to the local conditions for implementation. The principal issues facing the provinces in meeting the 12th Five-Year Plan targets are: (i) the lack of institutional capacity at the provincial level to implement the national government's energy saving programs and policies on the ground, and to monitor and supervise energy efficiency progress; (ii) the current reliance of government efforts on administrative approaches, and the underutilization of pricing, tax and other fiscal incentives (including measures to encourage commercial financing to promote energy efficiency); and (iii) the lack of stable funding sources to support the implementation of energy saving policies and measures.

Hebei Province ranks second in energy consumption among all the provinces. The total energy consumption of Hebei Province in 2009 was 254 mtce or 8.7% of the national total of 2,920 mtce, ranking No. 2 among the provinces, while its GDP was CNY1.7 trillion ranking at No. 6. Energy consumption in Hebei Province is dominated by energy-intensive heavy industries, including power generation, petroleum and petrochemical, chemical, construction material (cement), coal, steel and iron, nonferrous metals, mechanical, textiles, and other manufacturing industries. Due to the large number of such heavy industrial facilities in Hebei, the growth of energy consumption has kept pace with the rapid expansion of the economy. Total energy consumption in Hebei has increased to 254 mtce in 2009 from 112 Mtce in 2000 with an average annual growth rate of approximately 10.6%. More than 90% of the total consumption is attributable to coal.

Despite the efforts of the provincial government in Hebei, the overall energy intensity has remained significantly higher than that of the most efficient provinces in the PRC. Hebei's energy intensity was 1.64 tce per CNY10,000 GDP in 2009, which was higher than other heavy industrial provinces, such as Shandong and Liaoning, ranking at 23rd worst (out of 30) among the PRC provinces in both 2005 and 2009. Hebei therefore represents a province with substantial potential for energy efficiency improvement.

It should be noted that, despite Hebei being the second-highest energy consuming province in PRC, with energy intensity substantially higher than the national average, the national activities related to capacity building and innovative financial mechanisms for energy efficiency implementation, funded by the World Bank and other donor agencies, have not focused on nor adequately addressed the specific challenges and issues faced by Hebei. The province therefore represents an excellent candidate for the activities proposed in this project.

It is also noted that one of PRC's designated cities as a low-carbon city (Baoding) is located in Hebei Province and it borders the municipalities of Beijing and Tianjin which are selected for pilot testing of cap-and-trade-based emission trading. However, Hebei has not been the direct beneficiary of provincial energy efficiency projects implemented by development partners including GEF in the past.

Energy Efficiency Efforts in Hebei Province

Consistent with the national targets for energy efficiency improvement, Hebei Province set the target to reduce energy intensity by 20% during the 11th Five-Year Plan. A series of industrial energy efficiency programs were implemented in the province during 11th Five-Year Plan, including: (i) extending the national "1,000 Enterprise" program to provincial "Double 100 Enterprises" program by entering into responsibility contracts for achieving specific and quantified energy savings targets for 109 enterprises in addition to enterprises included in national "1,000 Enterprises" list; (ii) retiring outdated production capacities and production lines, especially in iron and steel, building materials and power industries; (iii) targeting 30 municipalities and 30 energy-intensive enterprises in the province under the "Double-30**"** Action Plan for EE&ER enforcement (which started in 2008); (iv) implementing 10 key energy efficiency projects, which among other things included (a) improvement of industrial boiler operational efficiency by 5%; (b) development of heat and power cogeneration; (c) increase coverage of centralized district heating to over 90%; (d) implementing waste heat and pressure recovery projects, (e) enhancement of demand side management (DSM) activities for electricity use; and (f) other policy measures introduced in the 11th Five-Year Plan.

As a result of these efforts, Hebei's energy intensity was reduced by 20.11%, from 1.96 tce per unit GDP of CNY10,000 in 2005 to 1.64 tce 10,000 GDP in 2009 and further to 1.585 tce in 2010, exceeding the 20% target set out in the 11th Five-Year Plan. Despite the achievement of exceeding the energy intensity improvement target of 20% in the 11th Five-Year Plan, Hebei's energy intensity in 2010 (1.585 tce per unit GDP of 10,000 CNY) remained well above the national average of 1.034 tce. Numerous industrial facilities in Hebei Province are still outdated with low energy efficiency. Hebei has now set a target of 17% for energy intensity improvement in the 12th Five-Year Plan (2011-2015), which is more aggressive that the national average of 16%.

Challenges for Further Promoting Energy Efficiency in Hebei Province

As a province with heavy concentration of energy-intensive industries, the Hebei Province will have to implement several specific initiatives to achieve the desired improvement in energy intensity during the 12th Five-Year Plan and beyond. During the 11th Five-Year Plan, PRC has relied heavily on administrative mechanism to achieve the energy efficiency improvements. Reliance on market mechanisms has major economic efficiency advantages. It is needed to develop a blend of administrative orders and market mechanisms with greater emphasis on market-based tools. The present policy and incentive frameworks need to be reformed to provide: (i) innovative approaches to energy pricing and fiscal incentives that provide targeted incentives to desired technologies, (ii) facilitating the transfer of more advanced technologies relevant to the industries based in Hebei, and (iii) create a market place for energy efficiency savings by establishing tradable energy efficiency certificates.

The energy efficiency services industry has been developing in recent years in Hebei Province, but the capacity of third-party providers of energy efficiency technologies, products and equipment, and project packaging services needs to greatly expand during the next 5 years to provide the infrastructure needed for the scaled up implementation of EE and ER projects. Most of the existing ESCOs in Hebei Province have limited registered capital, assets and employees, and can develop and implement only small-scale EE projects with limited investment and short paybacks. The ESCOs are unable to obtain bank financing for their projects because on the banks' perception of risks and the lack of meaningful collateral.

Most local banks in Hebei are unfamiliar with the technology and business of energy efficiency. Financing of project where the benefits streams are in projected operating cost savings are not conventional for most banks. The commercial bank financing of energy efficiency investments is insignificant compared to the investments required and most of the energy efficiency projects are funded with own funds of project owners. It is necessary to increase the technical capacity of financial institutes to understand the energy efficiency financing and to promote off balance sheet financing for energy efficiency investments. At the same time, there is limited ability to identify and prepare bankable energy efficiency investments by industrial enterprises as the third party energy service industry is still at early stage of development.

The Proposed GEF Project

The proposed project is designed to offer a systematic approach for addressing the enhancement of institutional capacity of the various stakeholders critical to the success of the Hebei's efforts to meet the energy intensity reduction targets of the 12th Five Year Plan. The principal goals of this project are to create an enabling environment and develop the institutional capacity to implement a large number of projects to significantly increase investment in energy efficiency projects and improve the energy intensity of Hebei Province, thereby contributing to substantial reductions in GHG emissions. The proposed project will support the following four components:

Component 1: Energy Efficiency and Emission Reduction Technology Identification and Dissemination, and Design of Market-based Incentives:

Since the industrial structure in Hebei Province features a high proportion of heavy industries which contributed more than 50% to provincial GDP, with around 80% of provincial energy consumption, it is a challenge for the energy-intensive industry sectors to achieve ambitious EE and ER targets set by the provincial government. It is clear that new and innovative process technologies in the major industry sectors are needed for further energy efficiency improvement, because some of the obvious energy saving methods has already been implemented. Therefore this component will provide technical assistance (TA) related to transfer of new and innovative technologies and policy incentives to improve EE and ER in the province.

Although 9 demonstration energy efficiency projects are to be financed under the component 4, there are many other best practice technologies for improving energy efficiency that are likely to be applicable to the industry in Hebei. This component will identify such technologies, assess their applications in Hebei, and develop the policies, procedures and strategies to transfer and implement these technologies.

This component will support EE and ER strategic planning in Hebei Province on technology transfer to achieve the targets. The proposed activities include:

(a) Identification of leading edge technologies and assessment of their potential applicability to industries in Hebei Province;
(b) Evaluation of the current policy support environment for the technology transfer in EE industry, making specific recommendations on how to increase the technical and financing capacity of the industry to apply identified technologies;
(c) Design of market-based incentives for energy efficiency improvement–such as targeting differential energy pricing or incentives for different types of technologies or industries; creating a marketplace for tradable sectoral energy efficiency improvement certificates compared to defined benchmark standards;
(d) Provision of targeted fiscal incentives to financial institutions to increase lending to energy efficiency projects and streamlining investment incentives provided to industrial enterprises and energy service companies;

(e) Development of a policy paper and a recommended strategy to encourage the replication and transfer of the innovative technologies deployed in Hebei to other provinces in PRC.

Hebei Province has decided to establish an integrated EE monitoring, supervision, and information dissemination platform to help meet the needs of timely, consistent and accurate reporting of energy consumption trends both geographically by prefecture and among key energy-consuming enterprises. The platform will help ensure the quality and consistency of the data, improve the capacity to provide early warning of potential problems, expand the scope of EE monitoring and supervision to a larger number of enterprises and municipalities, and provide a feedback loop to enterprises and government agencies on the effectiveness of their energy efficiency programs.

This component will provide TA including software and equipment for the implementation of a network-based energy management information platform as well as training and other awareness raising activities to relevant government agency staffs. Features of the proposed platform will include collection (preferably automated) of the energy consumption data in key energy consuming enterprises based on the consistent data collection and verification protocols, a standard reporting system, and a portal for sharing knowledge and information on a range of topics, including successful case studies, new regulations and government guidelines, training course offerings, and the information on new technologies. This will prevent the technology transfer being limited to the enterprises that are direct beneficiaries of the GEF financed technology transfer activities.

Component 2: Capacity Building and Development of the ESCO industry and Measurement, Reporting and Verification Agents in Hebei

The energy efficiency services industry has been developing in recent years in Hebei Province, but this industry of the third-party providers of energy efficiency technologies, products and equipment, and project packaging services needs to greatly expand during the next 5 years to provide the infrastructure needed for the scaled up implementation of EE and ER projects. Most of the existing ESCOs in Hebei Province have limited registered capital, assets and employees, and can develop and implement only small-scale EE projects with limited investment and short paybacks. The ESCOs are unable to obtain bank financing for their projects because on the banks' perception of risks and the lack of meaningful collateral.

To address some of the issues faced by the province, Hebei has established a super ESCO, the Fakai Scientific Electricity Services Limited Liability Company, a public sector company which is a subsidiary of the Hebei DSM Center belonging to the Hebei Provincial government. This super ESCO offers a broad range of services such as EE technology consulting, including energy auditing, EE technology development and application (production, installation, and marketing), EE appraisal, and EE project financing. However, while the super ESCO in Hebei has demonstrated its advantages of offering a broader scope of EE services by integrating resources, such as financing and networking, their capacity in all aspects of EE & ER project financing and implementation needs to be considerably strengthened.

This component will provide the TA to enhance the capacity building to the super ESCO and all of the ESCOs active in Hebei Province to prepare technical studies and project proposals, the ability to assist in mobilizing project financing, the development and negotiation of energy performance contracts, the improvement of internal business management procedures, and the establishment of improved capacity for measurement and verification. The TA will be provided through a series of structured training seminars on various topics related to the technical, economic, financial, institutional, and operation aspects of energy services and performance contracting. International experts will be engaged to develop the structured training materials and will "train the trainers" in Hebei so that capacity for additional training for ESCOs in Hebei (and in other provinces) shall be put in place. The international experts will be required to take advantage of existing ESCO training and capacity building materials

from prior ADB, World Bank and other donor projects, and modify/adapt these materials to Hebei.

While a major focus of the project is on enhancing the capacity of local ESCOs, the project will also facilitate the activities of existing national and international ESCOs that may be interested and willing to do business in Hebei. Efforts will be made to encourage such ESCOs to enter the industrial energy efficiency services market in Hebei and to form joint ventures or other types of collaborations between national/international ESCOs and local ESCOs in Hebei. The capacity building of the ESCOs in Hebei and the super ESCO established by the provincial government will contribute significantly to a larger role of ESCOs in energy efficiency project implementation, and will leverage, coupled with the bank capacity building and the guarantee facility to be developed under component 3, additional investment from commercial banks for energy efficiency projects in Hebei.

There are currently no qualified third party organizations in the Hebei Province that could provide independent EE&ER M&V (Monitoring and Verification) services. This would also promote increased involvement of ESCOs in energy efficiency investments through energy saving performance contracts. This component will support M&V capacity building for third party M&V organizations through TA and/or a cost sharing facility, and will include: (i) development of a provincial mechanism or system to facilitate private investments in capacity building for M&V of energy savings and carbon emission reductions. This mechanism would include the establishment of an organization that will train and certify professional individuals and organizations to conduct M&V; (ii) conducting training and capacity building workshops for the independent M&V agents, which will include training related to the new ISO 50001 standard and its procedures and requirements for measurement and verification of carbon emissions; (iii) supporting the conduct of the M&V for the specific investments implemented under the ADB Hebei Energy Efficiency Improvement and Emission Reduction Project; (iv) acquisition of equipment for conducting M&V; and (v) developing an operation manual and other necessary procedures and guidelines for operationalizing this mechanism.

Component 3: Capacity Building for Banks and Industrial Energy Users

To accomplish the goals of energy intensity reduction, industrial firms in Hebei need to deploy the best practices in their respective industries. This component will include training of industrial energy managers on the technologies identified in component 1 as well as in best practices in energy management such as the new ISO Standard 50001. Also, while there have been some industrial energy efficiency projects in Hebei, the number of projects financed by banks and the total amount financed have been rather limited. The Industrial Bank of China and Huaxia Bank have been involved in industrial energy efficiency financing as a result of their participation in International Finance Corporation and World Bank projects, respectively, but the activities of the other banks in Hebei have been very small relative to the need. Part of the reason for this is that industrial firms have limited capabilities to develop proposals in the format and structure that banks require for appropriate project appraisal. This component will, therefore, provide training and technical assistance to industrial firms in preparation of bankable or investment grade project proposals.

This component will also include the training of energy managers and the introduction of the new ISO 50001 standard for energy management and the conduct of seminars for industry, government and energy service providers on the major provisions and requirements of this new standard. As in the case of component 2, international consultants will be engaged to develop a curriculum for training of energy managers using the principles of ISO 50001; they will identify and utilize the available training materials for ISO 50001 and coordinate the training efforts with other similar training programs in PRC. It is anticipated that the international consultants will use the “train the trainers” approach to establish the capacity in Hebei to provide future training to energy managers in Hebei and as appropriate from neighboring provinces.

This component will also include training and capacity building of banks and financial institutions in

Hebei with respect to EE&ER project financing. Training modules on the characteristics of EE&ER projects, project appraisal issues, developing credit risk sharing of lending to energy efficiency projects through an appropriate guarantee mechanism supported by the provincial government will be included. The financial institutions will be provided with training to undertake credit appraisal for energy efficiency investments proposed by industrial firms as well as those undertaken by ESCOs using energy saving performance contracts.

This component will also design a credit guarantee facility to mobilize commercial bank financing to ESCO projects. The credit guarantee facility is expected to provide partial credit guarantees to guarantee the technical performance of ESCOs with respect to the energy performance contracts (EPC) and the commercial bank would assume the credit risk of host companies.

Component 4: Mobilizing Financing for Demonstration Industrial Energy Efficiency Projects

ADB is providing a line of credit of $100 million to Hebei under the Hebei Energy Efficiency Improvement and Emission Reduction Project for investments in demonstration energy efficiency subprojects in industrial enterprises in the province. Based on the project preparatory technical assistance, a number of industrial subprojects have been identified. The subprojects identified by ADB consists of (i) installation of a coke dry quenching (CDQ) system of 110 t/hour (hr) capacity in a steel facility; (ii) installation of another CDQ system in a large coking facility; (iii) installation of two 3-megawatt (MW) steam turbines and a 0.5 MW biogas turbine generator in a biochemical plant; (iv) a high efficiency 25 MW cogeneration system in a starch-sugar company; (v) four energy efficiency retrofit projects in a textile mill; (vi) optimization of carbon electrode production system in a cabon electrode manufacturing facility; (vii) establishment of an energy management system and an automation system in an iron and steel complex; and (viii) installation of a heat pump system to replace the curent cooling towers in a cogeneration plant.

It is expected that nine subprojects having a total investment requirement of about $180 million would be financed initially using the ADB loan proceeds of $100 million assuming ADB would finance about 50%–70% of the investment cost. These projects are estimated to save 297,000 tce per year, resulting in CO_2 savings of 760,000 tCO_2 year. As the payback period and the repayment period of subprojects loans are likely to be 5 years, it is proposed to set up a revolving fund to recycle the loan proceeds two times by extending the grace period of ADB loan up to 15 years. Assuming the revolving fund can be utilized for three times and in subsequent rounds the ADB funds can be used to leverage commercial bank financing, it is estimated that the total investments of $600 million would be mobilized in industrial energy efficiency. Assuming similar level of energy efficiency improvements in the future subprojects to be financed by the revolving fund (assuming two more batches of sub projects) , the total annual energy savings and CO_2 savings to be realized over a 15 year period would be in the range of 1,000,000 tce and over 2.4 million tCO_2 per year.

This component also includes preparing feasibility studies and detailed engineering designs for energy efficiency projects using new state of the art technologies identified under component 1 for several demonstration projects. The GEF grant funds would be used for this purpose as investment support. Part of the grant funds would also be utilized to facilitate the technology transfer including intellectual property rights / patents. The projects prepared using the GEF grants would be considered for financing under the revolving fund.

This component will also include the establishment of a guarantee facility which will be designed under Component 3, for providing partial credit guarantees to energy efficiency projects implemented by ESCOs. The guarantee facility will initially be pilot tested using part of the GEF grant funds allocated for this component as the “first loss reserve.” Subsequently, the “first loss reserve” would be increased using the interest differential (i.e. the difference between interest rate on ADB loan to Hebei Provincial Government through Ministry of Finance and the interest rate charged on sub loans made to

initial nine industrial energy efficiency projects). The accumulated interest difference is expected to be in the range of $ 20 million and significant part of this can be used for increasing the "first loss reserve" based on the lessons learnt during the pilot testing of guarantee facility using the GEF funds. The allocation of GEF grant funds to support investment activities under this component would be further discussed with the government counterparts and will be further developed and confirmed in the CEO endorsement document.

B. 2. Incremental /Additional cost reasoning: describe the incremental (GEF Trust Fund) or additional (LDCF/SCCF) activities requested for GEF/LDCF/SCCF financing and the associated global environmental benefits (GEF Trust Fund) or associated adaptation benefits (LDCF/SCCF) to be delivered by the project:

Introduction

Baseline

The national government of the PRC has made a formal commitment to improvement of energy efficiency in the 12th Five-Year Plan and has established aggressive targets; and the provincial governments have accepted these targets and are initiating activities toward meeting the aggressive goals. But the progress towards meeting the 12th Five-Year Plan targets will face a number of barriers, the most important one being the lack of adequate institutional capacity (within the provincial government, energy service industry, and financial institutions) to implement the provincial strategy and policies and to finance and implement the large number of EE&ER projects needed to meet the targets. Without developing the capacity among provincial government officials (including the PMO), the industrial and other large energy users, the ESCOs and others involved in energy efficiency services delivery, the financial community that needs to provide most of the funding for these projects, and the M&V agents needed to verify the energy and emission savings, the provincial government of Hebei will face great challenges to achieve its target of 17% energy intensity reduction. As a result, a large part of the cost-effective energy efficiency potential may remain untapped due to institutional, policy and financial barriers.

In the 11th Five-Year Plan, the investments in energy efficiency in Hebei were CNY48.4 billion or about $7.3 billion. These investments achieved energy savings of 14.0 mtce/yr and corresponding emission reductions of 33.6 $MtCO_2$ equivalent per year. The unit investment cost per tce is $521. During the 12th Five-Year Plan, it is expected to achieve energy savings of 20 mtce/yr. Based on the energy savings and emission reductions to be achieved for subprojects identified for component 4, the unit investment cost is $601/tce. This shows the diminishing return per investment for energy efficiency investments as it costs more under the 12th Five-Year Plan to achieve a unit energy saving. Assuming a unit investment of $600/tce during the 12^{th} Five-Year Plan, the total investment requirement to achieve the 20 mtce of energy savings per year target would be $12 billion.

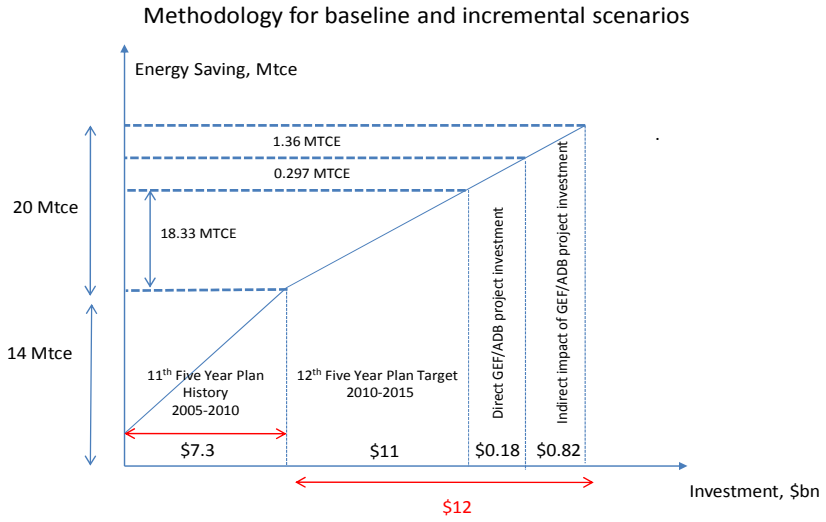
In the baseline scenario, it is expected that, in the absence of the project, Hebei will be able to achieve the only $11 billion as Hebei is suffering from capacity shortages in the industrial sector, financial institutions as well as lack of market-based policies for promoting energy efficiency. Under this scenario, the annual energy savings achieved would be 18.33 mtce, resulting in a shortfall of 1.67 mtce.

Incremental Benefits (i.e., indirect) of Components 1, 2 and 3

GEF involvement, as outlined in this project proposal, will provide the necessary support to develop and implement an integrated set of actions targeted to comprehensively address the major constraints on scaling up financing and implementation of energy efficiency improvement projects, lead to increased and accelerated energy efficiency investments, and improve the cost-effectiveness of energy efficiency activities. The proposed GEF financed activities will complement the ADB-

financed investments by establishing the enabling environment through policy reforms and capacity building.

The GEF involvement will lead to introduction of state-of-the-art technologies for energy efficiency and emission reductions and development and creation of a sustainable financing mechanism through active participation of financial institutions in EE & ER financing. It will also establish an enabling policy environment and a competent energy service industry consisting of ESCOs, third party verifiers, and supporting installers, contractors, etc. It is conservatively estimated that components 1,2 and 3 will indirectly contribute to mobilizing $820 million in industrial energy investments including $200 million to be mobilized by ESCO industries in Hebei. These investments would result in energy savings and emission reduction of of 1.36 mtce and 3.28 $MtCO_2$ equivalent respectively.



Incremental Benefits (direct) of Component 4

The identified energy efficiency projects to be implemented under component 4 will result in investments of $180 million and an annual energy savings of 297,000 tce during the 12th Five-Year Plan. These would result in direct emission reduction benefits of 760,000 tCO_2 equivalent.

Although component 4 will mobilize a total of $600 million resulting in energy savings of an emission reduction of 1 million tce and 2.4 million tCO_2 equivalent due to the investments made over 15 years through the revolving fund, only the energy savings and emission reductions due to the identified subprojects are included in the incremental analysis as the subsequent projects would be implemented after the 12th Five-Year Plan.

Summary

A summary of the baseline and the incremental benefits of this project is provided below:

Investments, Energy Savings & Emission Reductions	**Baseline Scenario**	**Direct Incr. Benefits– Component 4**	**Indirect Incr. Benefits attributed to Components. 1,2, 3**	**Total Benefits**
Investments in Energy Efficiency (billion $)	11	0.18	0.82	12.0
Annual Energy Savings (Mtce [million ton of coal equivalent])	18.33	0.297	1.36	20.0
Annual Emission Reductions (MtCO2e)	44.0	0.760	3.28	48

Also, the institutional capacity and the financing and implementation frameworks developed under the GEF funding would lead to additional energy efficiency improvement well-beyond the 12th Five-Year Plan. Further, the lessons learned and the products and tools developed in this project will be replicable to scale up energy efficiency and emission reduction programs in other provinces.

B.3. Describe the socioeconomic benefits to be delivered by the Project at the national and local levels, including consideration of gender dimensions, and how these will support the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF). As a background information, read Mainstreaming Gender at the GEF.":

The GEF project is expected to create an enabling environment through institutional capacity building, which would lead to a substantial increase in energy efficiency investments over the medium-and long-term. The investments in energy efficiency would also result in reduction SO_2, NO_x and other local pollutants. Hebei is one of the most heavily polluted provinces in PRC due to the presence of energy-intensive heavy industries such as iron and steel, chemicals, cement and other building materials. These local pollutants are causing health impacts and acid rain resulting in significant socioeconomic costs. The improved, cleaner and more efficient production processes will significantly improve the air quality of the province which would have significant socioeconomic benefits in terms of improved health impacts and agricultural productivity.

In the absence of this project, it is likely that the Hebei government may shut down some of the oldest and most inefficient industrial plants to reduce GHG emissions, leading to a loss of jobs in the province. With the project, the adoption of new, efficient technologies is likely to lead to modernization of the industrial facilities along with energy savings and emission reductions and retention of jobs, thereby providing benefits to the province. With respect to gender issues, it should be noted that the health burden associated with high pollution levels often falls predominantly upon women as they are often responsible for looking after sick people in the household. This project will alleviate that burden by reducing local pollution levels.

B.4 Indicate risks, including climate change risks that might prevent the project objectives from being achieved, and if possible, propose measures that address these risks to be further developed during the project design:

The possible risks and mitigation approaches are as follows:

(i) The fiscal and institutional mechanisms recommended may not be implemented. This risk will be mitigated through a participatory approach involving all stakeholders during the preparation and development process. The existing shortcomings and barriers will be carefully analyzed and different options evaluated. The possible downside of the recommended options will be assessed and mitigation measures designed;

(ii) Lack of institutional capacity at the provincial level to sustain the implementation of the financing mechanisms. The risk will be mitigated through a carefully designed and implemented technical assistance and capacity building program to substantially enhance the institutional capacity of the various stakeholders;

(iii) A sufficient number of projects may not be available for the planned investments. This risk will be mitigated by developing and implementing carefully designed dissemination workshops and a public awareness campaign targeted at industrial and other large energy users. A preliminary identification of potential projects has already been made as a part of the preparation of ADB-financed project and an initial "project pipeline" has already been identified.

(iv) The ESCOs and other members of the energy services delivery chain may not be able to develop and offer viable performance contracting models that will leverage increased investment from banks in energy efficiency project financing. This risk will be mitigated by proper structuring of the structured training in component 2.

(v) Banks may not develop appropriate financial products for industrial energy efficiency investments, which will limit the financing of such projects. This risk will be mitigated by significant emphasis of bank capacity building and transfer of international experience with respect to innovative financial products for energy efficiency financing.

B.5. Identify key stakeholders involved in the project including the private sector, civil society organizations, local and indigenous communities, and their respective roles, as applicable:

The key stakeholders involved in this project are:

For component 1: The Hebei Province government agencies (Hebei Development and Reform Commission, Hebei Finance Bureau, Hebei Resource Conservation and Climate Change Department, and the PMO

For component 2: The HDSM center and its super ESCOs, ESCOs in Hebei, manufacturers and suppliers of energy-efficient technologies, products and equipment, and M&Vagents

For component 3: Industrial energy users in Hebei Province, and banks and financial institutions in Hebei Province

component 4: Industrial energy users in Hebei Province, and banks and financial institutions in Hebei Province and the PMO

Further assessment and description of the specific stakeholder and their involvement in the project and the benefits derived by them will be conducted in the project preparation phase and reported in the final document for GEF CEO endorsement.

B.6. Outline the coordination with other related initiatives:

GEF has approved the First and Second China Energy Conservation Projects, to support small- and

medium-sized commercial energy conservation projects by removing financing, technical or policy barriers through the introduction of a performance-based contracting mechanism. Institutionally, they focused on policy formulation, capacity building and developing a more efficient energy conservation information dissemination program at the national level. These two projects have been implemented successfully and resulted in the significant removal of barriers for the commercial implementation of the targeted small- and medium-sized energy efficiency projects in PRC. Particularly, these projects introduced the concept of ESCOs and fostered their development in PRC, which are now playing important roles in promoting energy efficiency investment.

In addition, GEF has initiated the China Energy Efficiency Financing Project (CHEEF) to strengthen the energy efficiency lending capabilities of PRC banks and improve the access of energy efficiency projects to finance at the national level. CHEEF primarily aims to facilitate large-scale energy efficiency financing through strengthening the EE lending capabilities of national banks and reducing technical barriers for large industries, particularly the top 1,000 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. The IFC had implemented the China Utility Based Energy Efficiency Finance (CHUEEF) Project using GEF fund as the “first loss reserve” to provide credit guarantees to ESCO projects. The lessons learnt from the CHUEEF project will be taken into account in the desgin of credit guarantee facility under the proposed project.

The World Bank and GEF has also China Provincial Energy Efficiency Scale up Program covering three provinces–Jianxi, Shanxi and Shandong. This project includes institutional capacity building, policy reforms, creation of an energy efficiency fund, and development of demonstration projects. This project is designed to offer a systematic approach for addressing the currently poor incentives and weak institutional capacity at the provincial level to improve energy efficiency with the aim of significantly increasing investment in energy saving so as to reduce greenhouse gas emissions. The project will also create an energy efficiency fund and use this fund for some demonstration projects.

The proposed program focusing on Hebei Province would develop a provincial platform to substantially improve and sustain energy efficiency investments by addressing the major constraints faced at the provincial level, such as the lack of (i) adequate pricing and fiscal policies, (ii) stable funding sources, and (iii) institutional capacity. These features make the project different from, but rather supplemental to, CHEEF, the First and Second China Energy Conservation Projects, which focused on energy efficiency program and policy formulation, and instiutional capacity building at the national level. The financing and implementation projects under the proposed program will specifically target the key energy-intensive industries in Hebei, both public and private ownership, as well as large public sector energy users in the Hebei Province. The project will also be assessing the feasibility of innovative policies for increasing investments in energy efficiency,such as a market-based energy efficiency trading scheme and a performance guarantee facility. These innovative concepts are not included in the other projects.

The proposed project will coordinate its activities with the other projects to gain from the lessons learned, particularly with respect to policies, regulations and institutional frameworks to scale up energy efficiency financing. The various projects complement each other, ultimately ensuring the successful implementation of the government's strategy at the national and provincial levels, and allowing the translation of national level targets into solid action and outcomes at the provincial level in Hebei. By developing institutional capacity, strengthening the financing and implementation capacity, and demonstrating the feasibility of energy efficiency in the selected industries in Hebei, the proposed project can be replicated in other provinces, thereby further contributing to the realization of the national level objectives. The project management units and task teams for this Hebei project will share their knowledge and experience with project preparation and implementation within the task teams engaged in the other GEF projects.

ADB, in collaboration with United Nations Environment Program (UNEP), is in the process of preparing GEF-financed program (i.e., Asia Pacific Climate Technology Network and Finance Center). This project is expected to establish national and regional technology centers and establish a market place for low-carbon technologies and catalyze investments in low-carbon technologies. It is expected the proposed GEF program focusing on Hebei Province in PRC will leverage on the low-carbon technology transfer mechanisms to be initiated under the complimentary GEF-financed regional program to be implemented by ADB and UNEP.

C. DESCRIBE THE GEF AGENCY'S COMPARATIVE ADVANTAGE TO IMPLEMENT THIS PROJECT:

ADB is uniquely positioned to provide the national government of PRC as well as provincial governments with its support, given its close working relationship with the PRC over the last 2 decades and its successful experience in integrating technical assistance and lending operations with the government's policy agenda, and its energy policy knowledge and experience in supporting energy efficiency improvements in many countries. ADB has been actively engaged in the PRC in a number of projects related to energy efficiency and emission reduction, including the Guangdong Energy Efficiency Power Plant and the Energy Conservation Promotion Project in Tianjin. ADB is also supporting the pilot testing of cap-and-trade-based emission trading in Tianjin and Beijing municipalities which borders Hebei Province and possible expansion of these carbon markets to Hebei Province will be explored.

In addition, ADB, in cooperation with GEF, is establishing a pilot center to facilitate climate change investments in Asia and the Pacific. This center is also cofinanced by the Asian Clean Energy Fund under the Clean Energy Financing Partnership facility and the VITO-Flemish Institute for Technological Research NV. The Center will support the deployment of technologies for both climate change mitigation and adaptation in developing countries of Asia-Pacific and develop a cohesive program to promote climate technology transfer and deployment in Asia and the Pacific.

C.1 Indicate the co-financing amount the GEF agency is bringing to the project:

ADB is providing a loan of $100 million for this project. In addition, ADB will be mobilizing about $80 million from banks and industrial firms in Hebei for the initial demonstration projects.

C.2 how does the project fit into the GEF agency's program (reflected in documents such as UNDAF, CAS, etc.) and staff capacity in the country to follow up project implementation:

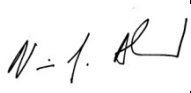
This project fits very well with ADB's country partnership strategy, 2008-2010 for the PRC, which has identified the government's efforts to improve the efficiency of resource use (especially energy efficiency) and shifting of PRC's growth trajectory to a greener and low-carbon growth path as one of the four pillars of ADB's assistance to PRC. ADB's Energy Policy (2009) has selected promoting energy efficiency as one of the three pillars of ADB's energy sector assistance. The Energy Policy has explicitly identified expanding ADB's assistance to industrial energy efficiency improvement through collaboration with industry associations, domestic banks and specialized agencies for promoting energy efficiency, and ESCOs as a key strategy for shifting developing Asia to a low-carbon growth path.

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 Operational Focal Point endorsement letter(s) with this template. For SGP, use this OFP endorsement letter).

NAME	POSITION	MINISTRY	DATE *(MM/dd/yyyy)*
Jiandi Ye	GEF Operational Focal Point for China / Director, International Department	**MINISTRY OF FINANCE**	**08/30/2011**

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF/LDCF/SCCF policies and procedures and meets the GEF/LDCF/SCCF criteria for project identification and preparation.					
Agency Coordinator, Agency name	**Signature**	**DATE** *(MM/dd/yyyy)*	**Project Contact Person**	**Telephone**	**Email Address**
Nessim Ahmad Director, Environment and Safeguards concurrently Practice Leader (Environment) Asian Development Bank		09/15/2011	Pradeep Perera Senior Energy Specialist	+632 632 5230 / +632 632 5830	pperera@adb.org