



PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: Full-sized Project

THE GEF TRUST FUND

Submission Date: October 10, 2008

Re-submission Date: Nov 18, 2008

PART I: PROJECT IDENTIFICATION

GEFSEC PROJECT ID¹: 3824

GEF AGENCY PROJECT ID: P098915

COUNTRY(IES): China

PROJECT TITLE: Sino-Singapore Tianjin Eco-City Project (SSTECP)

GEF AGENCY(IES): World Bank

OTHER EXECUTING PARTNER(S): Sino-Singapore Tianjin Eco-City Administrative Committee (SSTEAC)/ Tianjin Eco-City Investment and Development Co. Ltd.(TECID)/Tianjin Construction Committee

GEF FOCAL AREA (S): Climate Change,(select), (select)

GEF-4 STRATEGIC PROGRAM(S): Strategic program 1. Promoting energy efficiency in residential and commercial buildings Strategic program 5. Promoting sustainable innovative system for urban transport

NAME OF PARENT PROGRAM/UMBRELLA PROJECT: SINO-SINGAPORE TIANJIN ECO-CITY

INDICATIVE CALENDAR	
Milestones	Expected Dates
Work Program (for FSP)	Jan 2009
CEO Endorsement/Approval	July 2009
GEF Agency Approval	Oct 2009
Implementation Start	Dec 2009
Mid-term Review (if planned)	Dec 2011
Implementation Completion	Dec 2013

A. PROJECT FRAMEWORK

Project Objective: This project aims to assist Sino-Singapore Tianjin Eco-City Administrative Committee (SSTEAC)/ Tianjin Eco-City Investment and Development Co. Ltd.(TECID) with help of Tianjin Construction Committee to introduce a new integrated planning and management approach in development and implementation of a new Eco-Low Carbon City, called Sino-Singapore Tianjin Eco-City (SSTEC). SSTEC is intended to be a model Eco-Low Carbon City in China which is resource/energy efficient, lower carbon emission, environmentally sustainable, socially integrated and economically viable city.

Project Components	Indicate whether Investment, TA, or STA**	Expected Outcomes	Expected Outputs	Indicative GEF Financing*		Indicative Co-financing*		Total (\$)
				(\$)	%	(\$)	%	
1.Implementation Framework	TA	Establishment of enabling policy, regulatory and institutional framework and development of an action plan for the implementation of SSTEC project, in an integrated manner, especially in the following aspects: <ul style="list-style-type: none"> policy/regulation and infrastructure investments finance, environmental impact and investment decisions cross sector integration 	Detailed investment, financial and implementation plan developed based on SSTEC Master Plan. Policy/regulatory and institutional framework and detailed operation procedures to implement SSTEC project, into place. Standards, codes and indicators, including quantifiable energy saving/carbon	1,200,000	91%	120,000	9%	1,320,000

¹ Project ID number will be assigned initially by GEFSEC.

		<ul style="list-style-type: none"> transport-land use integration, efficient resource, particularly energy and water use, through integration of the utilities' operations coordinated activities among the public sector, the private sector and the households 	<p>emission reduction for SSTE planning and management, developed.</p> <p>Standard application, monitoring and evaluation mechanisms established.</p>					
2. Green building (less energy usage and lower-carbon-emission buildings)	TA and Investment	<p>Increased supply chain capacity to deliver green buildings through systematic integration of efficient and cleaner energy technologies and practices into building design and construction; and</p> <p>Enhanced operational energy efficiency of buildings through strengthened commissioning, operation, and maintenance procedures for buildings and associated energy systems</p>	<p>TA: (i) strengthening the implementation of GBES, toward the incorporation of a few key GBES parameters into the regular building design review and construction inspection process; (ii) disseminating international best practices in commissioning, operation and maintenance of buildings and their energy systems; (iii) monitoring and evaluation of the demonstration projects for lower-carbon-emission (LCE) buildings.</p> <p>Investment: Successful commissioning of a LCE public school complex and a residential subdivision</p>	350,000	90%	40,000	10%	390,000
				3,663,636,	13%	24,000,000	87%	27,663,636
3. Green transport system (less energy usage and lower carbon emission transport)	TA	Greater usage of public and non motorized transport modes, less energy usage and GHG emissions per trip.	<p>Indicators guidelines and standards for, green transport,</p> <p>Integrated</p>	750,000	91%	75,000	9%	825,000

			transport strategy including policy/regulatory, institutional and financial framework					
			Application of green transport guidelines in detailed implementation plans					
			Intelligent Transport System (ITS) based operational and management plans.					
4. Project management				100,000	50%	100,000	50%	200,000
5. Project Monitoring				100,000	33%	200,000	67%	300,000
Total project costs				6,163,636		24,535,000		30,698,636

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

** TA = Technical Assistance; STA = Scientific & technical analysis.

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

	Project Preparation*	Project	Agency Fee	Total
GEF	200,000	6,163,636	636,364	7,000,000
Co-financing	200,000	24,535,000		24,735,000
Total	400,000	30,698,636	636,364	31,735,000

* Please include the previously approved PDFs and planned request for new PPG, if any. Indicate the amount already approved as footnote here and if the GEF funding is from GEF-3.

C. INDICATIVE CO-FINANCING FOR THE PROJECT (including project preparation amount) BY SOURCE and BY NAME (in parenthesis) if available, (\$)

Sources of Co-financing	Type of Co-financing	Amount
Project Government Contribution	Cash	217,500
Project Government Contribution	In Kind	517,500
GEF Agency(ies)	(select)	
Bilateral Aid Agency(ies)	(select)	
Multilateral Agency(ies)	(select)	
Private Sector (co-financing for the green building construction)	Cash	24,000,000
NGO	(select)	
Others	(select)	
Total co-financing		24,735,000

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

GEF	Focal Area	Country Name/	(in \$)
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Agency		Global	Project Preparation	Project	Agency Fee	Total
(select)	(select)					
(select)	(select)					
(select)	(select)					
(select)	(select)					
(select)	(select)					
(select)	(select)					
Total GEF Resources						

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

PART II: PROJECT JUSTIFICATION

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

Cities are responsible for 75-80% of the world greenhouse gas (GHG) emissions (C40 Large Cities Climate Summit, May 2007), implying that innovative actions are needed at the city level. Recent estimates suggest that China's rapid urbanization has significant implications to climate change. Large part of urban growth is taking place in developing countries, and China alone is estimated to generate 65,000 Km² or 16% of all new urban built up area in developing countries from 2000 to 2030 (Transport and Urban Development Department, The World Bank, 2005).

Recognizing its important position in reducing global GHG emissions, the Government of China (GoC) has recently initiated a plan to address climate change mitigation in its city planning and management. In November 2007, GoC signed a framework agreement with Singapore to jointly construct Sino-Singapore Tianjin Eco-City (SSTEC). Subsequently, SSTEC Master Plan with US\$5.8 billion investment plan to develop SSTEC that aims to cover the population of 350,000 on a total development area of 30km² by 2020, was formulated. Sino-Singapore Tianjin Eco City Administration Committee (SSTECAC) is the responsible administration for SSTEC development and implementation. The actual investments will be undertaken by Tianjin Eco-City Investment and Development Co. Ltd. (TECID). Tianjin Construction Committee will provide technical support to SSTECAC and TECID.

The objective of the SSTEC is to build a model sustainable Eco and Low Carbon City that is energy/resource efficient and low carbon emission while it maintains social, cultural and economic resilience at the same time. SSTEC project will promote the use of clean energy and renewable energy/reuse and recycle of resources with innovative technologies and optimized industrial structure to achieve a highly-efficient recycling economy. The Master Plan encompasses various sectors including water, energy, land (soil and spatial layout) and transport, and its first phase targets the areas of green buildings and green transportation system.

As the Master Plan comprises different sectors, a shift from conventional sector specific approach to an integrated city-based approach becomes critical to ensure technological, policy and institutional coherence among investments and city management. GEF project will help SSTECAC develop, implement and manage its Eco and Low Carbon City in an integrated manner, especially in the following aspects: (i) policy/regulation and infrastructure investments; (ii) finance, environmental impact and investment decisions; (iii) cross sector integration; (iv) transport-land use integration; (v) efficient resource, particularly energy and water use, through integration of the utilities' operations; and (vi) coordinated activities among the public sector, the private sector and the households.

While GEF project supports the above mentioned overall integrated approach for developing SSTECH as energy efficient and low carbon city, it will pay particular attention to the development of energy efficient/low carbon emission building and urban transport, called respectively as "green building program" and "green transport program" under SSTECH. More specifically, the proposed GEF project will help SSTECHAC develop an overall enabling policy, regulatory and institutional framework including technical standards and key indicators to be applied to the entire SSTECH and develop an action plan for the implementation of the project. In addition, the project will support the development of two priority components with large impact on carbon emission, the green building component and the green transport components (less energy usages and lower carbon-emission buildings/transport) through TA and Pilot Investment.

The success of SSTECH largely depends on how well its high energy efficiency and low carbon strategy is realized in buildings. The main approaches reflected in the SSTECH Master Plan included the implementation of a green building evaluation standard (GBES) and targets for low- or no-carbon space heating and domestic hot water services. As a result the overall energy use in the buildings in SSTECH is expected to be significantly lower than comparable buildings (in terms of functions, say, school or apartment buildings) of recent vintage. In general, the key elements of energy efficiency in buildings include: (i) reducing heating, cooling and lighting loads; (ii) utilizing active solar energy and other environmental heat sources and sinks; (iii) increasing efficiency of appliances, heating and cooling equipment/system, and ventilation; and (iv) implementing commissioning and improving operations and maintenance of buildings and their energy systems. SSTECH project will adopt all these technologies as well as new innovations. The main challenges to SSTECH in advancing its energy efficiency, or more generally, green agenda in buildings lie in the development and implementation of a robust green building evaluation standard, utilization of most appropriate heating/cooling technologies (striking a balance between district heating/cooling and distributed heating/cooling), and adoption of policies and institutional arrangements which enhance and incentivize energy efficiency and conservation. These also are areas which SSTECH could benefit much from best international practices through the support of the proposed GEF project.

Transport is the fastest growing source of carbon emissions, with motorization, as the main driver, especially in urban areas. Growth in the usage of public transport which could mitigate this trend is slow, despite strong national policy advice to cities to give priority to public transport.² The perception of local governments is that walking and cycling are not modes that have a real role to play in the transport system. Comprehensive integration of land use and transport planning to reduce travel demand and carbon emissions is lagging international good practice. Institutional arrangements for urban transport are a source of concern, as is the lack of integration of finance and planning, particularly financially unconstrained infrastructure plans.³

SSTECH has adopted an innovative approach in setting increases in the use (mode share) of the green transport modes of public transport, walking and cycling as a Key Performance Indicators (KPI) for the TEC, with reductions in the grams of CO² per trip km as a secondary KPI. The design approach is to (i) integrate green transport and urban facilities, making access to them easier, safer and more attractive and (ii) design the main urban form around the public transport network. The challenge remains to refine the scale of the road network to match the lower travel demands by car rather than to follow the conventional regulations. As a new city, a small well integrated institutional structure can be established, and a capital investment plan prepared linked to projected income.

Few cities in the world have undertaken such a paradigm shift. Implementing such an innovative approach in China, which has distinctive socio-economic profiles and urban endowments, requires strategic planning and

² State Council Opinion # 46 October 2005

³ See China Building Institutions for Sustainable Urban Transport , World Bank EASTR Working Paper No. 4 January 2006

capacity building. The GEF-World Bank has extensive experience in urban development and capacity building both in China and around the world and is in an ideal position in providing Tianjin Municipality with the strategic support and capacity building. The GEF-World Bank can play an important role particularly in the areas of: (1) knowledge transfer (i.e. incorporating international best practice into SSTEAC design, planning and management); and (2) demonstration of best practices (not only demonstrating technologies but also setting benchmarks for follow-on investment). Therefore, the proposed project aims for assisting SSTEAC to succeed in this paradigm shift by (1) establishing enabling and operational policy and institutional environment for integrated city planning and management; and (2) supporting innovative green building construction and green transport system through TA and demonstration investment.

Sino-Singapore Tianjin Eco City Administration Committee and Tianjin Eco-City Investment and Development Co Ltd together with Sino-Singapore Tianjin Eco-City Investment and Development Co.Ltd with support of Tianjin Construction Committee will undertake follow-on investment to up-scale the construction of energy-efficient buildings and implementation of the green-transport system throughout SSTEAC. If proved to be successful, national government will adopt the standards and technologies developed and piloted in SSTEAC nationwide. Ministry of Housing, Urban and Rural Construction intends to replicate the Eco and Low Carbon City model of SSTEAC to other cities in China. The World Bank intends to finance the public infrastructure in the future. In addition, the World Bank is considering using the lessons learned from this project in formulating the concept of Regional Business Product called Eco² (Ecological Cities as Economic Cities) program, which aims for promoting an integrated paradigm and adaptable approach for environmentally and economically sustainable urban development in East Asia and Pacific Region.

The sizeable (US\$5.8 billion) follow-on investment in SSETC, the potential for the replication at the national level, and the synergy with the larger regional initiative (Eco²) are expected to trigger substantial up-scaling and leverage, and this in turn will multiply the benefit this project will deliver in slowing down the GHG emission in China and East Asia where rapid urbanization is taking place in an unprecedented scale.

B. Describe the consistency of the project with national priorities/plans: China is well aware of the impact of its urbanization on the global environment including climate change. GoC has developed a concept of Circular Economy to bring attention to a wide range of environmental considerations as China continues the rapid economic growth. The concept requires resource-efficiency and lower GHG emissions using the “3-R” principles of reduce, reuse, and recycle. Also, China’s current Five Year Plan for National Economic and Social Development (11th Five-year Plan) identifies “building a resource-conserving and environment-friendly society” as one of its main pillars and sets a directive target of 20% reduction in energy intensity per unit GDP. To achieve this national level objective, GoC has established National Coordination Committee on Climate Change and China National Climate Change Program (CNCCP) that sets up national and local level targets for climate change mitigation and adoption. The CNCCP program calls for city-executed, local-level strategies to deal with climate change. It is important to address energy-efficiency, low carbon emission and environmental issues at the city level, because China's administration is highly decentralized, and the cities are endowed with substantial authority in implementing key energy and environmental policies. For this reason, Ministry of Environmental Protection and Ministry of Housing Urban and Rural Development promotes the construction of eco-cities—the cities that are significantly more energy efficient, less carbon emission and have less impact to climate change compared to other Chinese cities. SSTEAC has been identified as one of such model eco-low carbon cities through competitive process. The government places emphasis on Tianjin in terms of the country’s economic and market development. It has two free market zones, Tianjin Economic-Technological Development Area (TEDA) and Tianjin Port Free Trade Zone, and functions as a major economic development node in northern China. Reflecting its economic importance and its implication to the global environment, there is a highest level political commitment and support from the GoC and Singapore to make SSTEAC as a model eco-low carbon city to be replicated at the national and regional levels. The proposed project contributes GoC in achieving national level objective of constructing energy efficient, low carbon emission and environmentally sustainable model city in Tianjin by assisting Tianjin Municipality to piloting a new integrated approach in city planning and management.

- C. Describe the consistency of the project with [GEF STRATEGIES](#) and strategic programs: The proposed project falls within the GEF climate change focal area. The project's main components, (1) green building demonstrations; and (2) green transport system development; are consistent with the GEF strategic objectives to: (1) promote energy-efficient technologies and practices in the appliance and building sectors; and (2) facilitate market transformation for sustainable mobility in urban areas leading to reduced GHG emissions. They also fall under two strategic programs: (1) promoting energy efficiency in residential and commercial buildings (strategic program 1); and (2) promoting sustainable innovative system for urban transport (strategic program 5). The proposed project also aims for establishing enabling and operational policy and institutional environment for integrated city planning and management. In doing so, the project will pay particular attention to the private sector engagement. In this way, the capacity and the foundation for the private sector follow-on investment will be left behind upon project completion, leading to a full transformation of the targeted markets. This is consistent with GEF approach of creating the market environment in which the technologies and practices can diffuse into the target markets.
- D. OUTLINE THE COORDINATION WITH OTHER RELATED INITIATIVES:** The proposed project will reflect the outputs and lessons learned from the GEF-World Bank-executed Projects: China World Bank Urban Transport Partnership Program and Heat Reform and Building Energy Efficiency Project(HRBEE). These projects aim for creating the conducive legal/regulatory and institutional environment in the concerned areas at the national level while the proposed project aims for creating such environment at the municipal level. The proposed project will forge strong policy and institutional links between the national and municipal levels by ensuring the policy consistency and promoting institutional coordination. In addition, the two GEF-World Bank projects undertake pilot demonstration of concerned new technologies/systems. The proposed project will reflect the lessons learned through these experiences in demonstrating green buildings and developing the green transportation system. A key lesson learned from HRBEE project is that it is critical that the compliance enforcement of building energy efficiency codes is integrated with the regular building design review and construction inspection process. The proposed project will benefit from the analytical work being done in the UTPP and build on the work being done in UTPP to develop guidelines for sustainable transport. Furthermore, the outcome of the proposed project will be an important input for the formulation of World Bank's Regional Eco2 initiative (which is explained in Section A).
- E. DISCUSS THE VALUE-ADDED OF GEF INVOLVEMENT IN THE PROJECT DEMONSTRATED THROUGH [INCREMENTAL REASONING](#) :** The baseline scenario is that the investments under the Master Plan will be carried out without the strategic advice, capacity building and technical backstopping by the GEF World Bank. The implication is twofold. Firstly, the investments will be carried out without a strategic action plan that integrates all planned activities under the Master Plan and related policy and institutional capacity building. Lack of such an action plan and enabling policy and institutional environment will lead to the situation that the investment will be carried out in a business-as-usual way that are largely sector specific and limited coordination among the sectors. Such sector-specific approach will not only reduce the efficiency gains from integration but also limit the potential for piloting and demonstrating an innovative approach in city planning and management for energy efficiency and low carbon emission. Secondly, the investment in each of the selected technologies will be carried out without reflecting the World Bank/GEF experience at the national, regional and global levels. This will not only limit SSTECH's options in selecting most suitable technologies, management modalities and policy and institutional settings but also results in insufficient synergy with the activities at the national and regional level. Therefore, the baseline scenario assumes smaller scope for integration/innovation and reduced potential for scale-up and replicability.
- F. INDICATE RISKS, INCLUDING CLIMATE CHANGE RISKS, THAT MIGHT PREVENT THE PROJECT OBJECTIVE(S) FROM BEING ACHIEVED, AND IF POSSIBLE INCLUDING RISK MEASURES THAT WILL BE TAKEN:** (1) Capacity risks: The project aims for piloting new approach to city planning and development. The implementation of the new approach requires capacity building of relevant public sector staff and providing enabling policy and institutional environment. Such capacity and enabling environment development will be addressed in the Strategy Development and Capacity Building component of the proposed project. (2) Commercialization risk: As the project introduces various new energy-efficient technologies, commercialization of those technologies involves some risks. To address this risk, the project will select the most suitable technologies to Tianjin Municipality taking into consideration its socio-economic profiles and local market conditions. Also, the project will collaborate with the private sector in selecting the technologies to ensure that those technologies will be readily available at the market after the project completion.

DESCRIBE, IF POSSIBLE, THE EXPECTED COST-EFFECTIVENESS OF THE PROJECT: The nature of the project - innovation on a city level and across all urban sectors - makes it difficult to establish cost-effectiveness metrics as in conventional single sector projects. In light of this, the proposed project intend to use a few key indicators which can capture the impact of such broad intervention on energy efficiency and carbon emissions when compared with the mainstream current situation in existing built-up area of Tianjin, and when appropriate, other parts of China. These indicators will be clearly defined and assessed during project preparation and confirmed at appraisal. The initial proposed indicators include:

- (1) Share of cleaner energy sources in energy supply
- (2) Share of public transport and non-motorized transport in intra-city passenger traffic
- (3) Square meters and share of LEED-certified or equivalent commercial buildings
- (4) Square meters and share of residential buildings exceeding the current building energy efficiency standards
- (5) Densities per households
- (6) Carbon dioxide emissions of residential energy use per unit construction floor area (kgCO₂/m² per year)

G. JUSTIFY THE COMPARATIVE ADVANTAGE OF GEF AGENCY: The project plans to invite the World Bank as GEF agency. The World Bank has been engaging in development and construction for many fields such as transport, urban development, rural development, energy source and human being development. Our country is one of the best members of the WB to carry our WB loan project and energy source and traffic are the focal fields of the World Bank. The World Bank is very experienced in the fields above and capable to assist us realizing defined objectives. Energy source field: The WB has always placed, for long, keystone of assistance on energy efficiency, development of renewable energy and clean energy, improvement of urban heating efficiency and power supply efficiency, collaborated with our country actively in energy source field assisting us to satisfy demand on energy well, reduce greenhouse gas discharging, accelerate sustainable growth and mitigate global climate warming. Transport field: the World Bank has offered loans of more than \$ 8 billion since 1983 for highway, water way and urban transport sectors in China, as well as new ideas and management experience to China while completing a batch of important highway and waterway projects accelerating development of traffic in out country.

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).

<i>Ciyong Zou, GEF Operational Focal Point in China, Ministry of Finance</i>	Date: <i>November 13, 2008</i>
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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.	
 <i>Steve Gorman</i> GEF Agency Coordinator	Project Contact Person
Date: <i>October 9, 2008</i>	Tel. and Email:
<i>Name & Signature</i> GEF Agency Coordinator	Project Contact Person
Date: <i>(Month, Day, Year)</i>	Tel. and Email: