



GLOBAL ENVIRONMENT FACILITY  
INVESTING IN OUR PLANET

**Naoko Ishii**  
CEO and Chairperson

June 12, 2017

Dear Council Member:

UNDP as the Implementing Agency for the project entitled: ***China: Energy Efficiency Improvement in Public Sector Buildings***, has submitted the attached proposed project document for CEO endorsement prior to final approval of the project document in accordance with UNDP procedures.

The Secretariat has reviewed the project document. It is consistent with the proposal approved by Council in October 2015 and the proposed project remains consistent with the Instrument and GEF policies and procedures. The attached explanation prepared by UNDP satisfactorily details how Council's comments and those of the STAP have been addressed. I am, therefore, endorsing the project document.

We have today posted the proposed project document on the GEF website at [www.TheGEF.org](http://www.TheGEF.org). If you do not have access to the Web, you may request the local field office of UNDP or the World Bank to download the document for you. Alternatively, you may request a copy of the document from the Secretariat. If you make such a request, please confirm for us your current mailing address.

Sincerely,

Naoko Ishii

Attachment: GEFSEC Project Review Document  
Copy to: Country Operational Focal Point, GEF Agencies, STAP, Trustee



# GEF-6 REQUEST FOR PROJECT ENDORSEMENT/APPROVAL

PROJECT TYPE: Full-sized Project  
 TYPE OF TRUST FUND: GEF Trust Fund  
 For more information about GEF, visit [TheGEF.org](http://TheGEF.org)

## PART I: PROJECT INFORMATION

Project Title: <b>Energy Efficiency Improvement in Public Sector Buildings in China (PSBEE)</b>			
Country(ies):	People's Republic of China	GEF Project ID: <sup>1</sup>	6930
GEF Agency(ies):	UNDP	GEF Agency Project ID:	PIMS 5395
Other Executing Partner(s):	In China: National Government Offices Administration	Submission Date:	31 March 2017
		Resubmission Date:	1 May 2017
		Resubmission Date:	8 June 2017
GEF Focal Area (s):	Climate Change	Project Duration (Months)	48
Integrated Approach Pilot	IAP-Cities <input type="checkbox"/> IAP-Commodities <input type="checkbox"/> IAP-Food Security <input type="checkbox"/>	Corporate Program: SGP	<input type="checkbox"/>
Name of Parent Program	N/A	Agency Fee (\$)	848,580

### A. FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES<sup>2</sup>

OBJECTIVES/PROGRAMS (FOCAL AREAS, INTEGRATED APPROACH PILOT, CORPORATE PROGRAMS)	TRUST FUND	GEF PROJECT FINANCING, US\$	CO-FINANCING, US\$
CCM-1 (PROGRAM 1)	GEFTF	5,439,300	30,000,000
CCM-1 (PROGRAM 2)	GEFTF	3,493,120	40,100,000
TOTAL PROJECT COST		<b>8,932,420</b>	<b>70,100,000</b>

### B. PROJECT DESCRIPTION SUMMARY

Project Objective: Facilitation of the energy conserving and energy efficient operation of buildings and building services in the public sector in China						
Project Component	Finance Type <sup>3</sup>	Project Outcomes	Project Outputs	Trust Fund	(In \$)	
					GEF Project Financing	Co-financing
1. Public Sector EC&EE Policy and Regulatory Frameworks	TA	Strict enforcement of approved enhanced policies and rules and regulations on energy efficiency and low carbon operation and maintenance of public sector buildings	1.1: Completed comprehensive assessment of applicable foreign and domestic energy conservation and energy efficiency (EC&EE) and low carbon (LC) policies and regulations for public sector buildings. 1.2: Formulated and promoted EC&EE improvement roadmaps (for at least 5 LGOA regions). 1.3: Formulated and enforced 8 policies including the associated guidance and implementing rules and regulations (IRRs) on energy monitoring and reporting, energy savings verification, and energy conservation in public buildings. 1.4: Completed demonstrations on the application of EC&EE policies and systems in 5 LGOA regions.	GEFTF	924,600	5,832,300

<sup>1</sup> Project ID number remains the same as the assigned PIF number.

<sup>2</sup> When completing Table A, refer to the excerpts on [GEF 6 Results Frameworks for GETF, LDCF and SCCF](#).

<sup>3</sup> Financing type can be either investment or technical assistance.

			<p>1.5: Developed and approved follow-up plan for the replication of piloted EC&amp;EE improvement policies in public buildings in other provinces or LGOA regions.</p> <p>1.6: Developed improved and updated 2 public sector building energy standards.</p>			
2. Energy Performance Monitoring and Evaluation System for Public Sector Buildings	TA	Better control and enhanced management of the energy performance of public sector buildings	<p>2.1.1: Reviewed and verified supplemental baseline energy information in the various major types of buildings within the public sector.</p> <p>2.1.2: Established public sector building energy audit system.</p> <p>2.1.3: Established public sector buildings energy management information system (EMIS).</p> <p>2.1.4: Established energy savings measurement &amp; verification system (ESMVS) in public buildings sector.</p>	GEFTF	1,109,350	13,584,300
	Inv		<p>2.2.1: Completed minimum 120 energy audits of public sector buildings (40 per year, for 3 years).</p> <p>2.2.2: Established Public Buildings EMIS database.</p>	GEFTF	795,750	9,745,000
3. EC&EE Improvement Promotion and Demo Programs for Public Sector Buildings	TA	Increased availability of resources (technical capacity, information and financing) for EC&EE initiatives in public sector buildings and facilities	<p>3.1.1: Established scheme for providing information about the features, technical specifications and costs of new EC&amp;EE low carbon technologies (including products) for the public sector.</p> <p>3.1.2: Published directory of recommended applicable and cost-effective new EC&amp;EE/LC technologies (systems and products) for public sector building administrators/managers.</p> <p>3.1.3: Completed assessment of market-based financing scheme options.</p> <p>3.1.4: Designed market-based financing of new EC&amp;EE/LC technology (system and product) applications.</p> <p>3.1.5: Selected EC&amp;EE/LC projects (total of 20) in public buildings in selected public sub-sectors.</p> <p>3.1.6: Completed feasibility analyses and design of 20 EC&amp;EE and LC technology application demonstration projects.</p>	GEFTF	527,600	5,832,300
	Inv		<p>3.2.1: Established scheme for market-based financing of new EC&amp;EE/LC technology (system and product) applications.</p> <p>3.2.2: Implemented 10 EC&amp;EE/LC technology applications demonstrations financed through market-based financing scheme in public buildings in selected public buildings.</p> <p>3.2.3: Implemented 10 EC&amp;EE/LC technology application demonstrations in public buildings.</p> <p>3.2.4: Published 2 reports on the impacts of the EC&amp;EE/LC project financing (1), and the EC&amp;EE/LC demo program (1).</p>	GEFTF	2,567,900	17,497,000

			3.2.5: Developed sustainable follow-up plans for the replication of the demonstrated applicable and feasible EC&EE/LC technologies in public buildings in 5 other provinces.			
4. Public Sector EC&EE Capacity and Awareness Enhancement Program	TA	Enhanced awareness and knowledge of public sector authorities and personnel and the citizenry on the cost-effective application of EC&EE technologies	4.1.1: Completed 5 project promotional campaigns and 5 workshops in target segments of the public sector. 4.1.2: Completed 5 training courses and 2 study tours for technical personnel of NGOA and LGOA, and NGOA-, and LGOA-administered public buildings on the implementation of the various EC&EE/LC programs. 4.1.3: Completed and post-evaluated EC&EE/LC capacity development program for the public buildings sector.	GEFTF	849,150	4,603,600
	Inv		4.2.1: Established information network for the promotion and dissemination of knowledge on public sector EC&EE and LC technology applications. 4.2.2: Established 5 public sector EC&EE/LC management cum education training centers in the different climate regions of China.	GEFTF	1,732,750	9,394,000
Subtotal					8,507,100	66,488,500
Project Management Cost (PMC) <sup>4</sup>					425,320	3,611,500
<b>Total Project Cost</b>					<b>8,932,420</b>	<b>70,100,000</b>

### C. CONFIRMED SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE

Please include evidence for co-financing for the project with this form.

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount (\$)
Recipient Government	National Government Office Administration	Grants	25,810,000
		In-Kind	5,000,000
	Jilin Provincial Government	Grant	11,700,000
	Jiangxi Provincial Government	Grant	5,700,000
Private Sector	Private Sector	Grant	16,000,000
		Grant	5,790,000
GEF Agency	United Nations Development Programs	Grants	100,000
<b>Total Co-financing</b>			<b>70,100,000</b>

### D. TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES) AND THE PROGRAMMING OF FUNDS

GEF Agency	Trust Fund	Country Name/Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee <sup>a)</sup> (b) <sup>2</sup>	Total (c)=a+b
UNDP	GEFTF	China	Climate Change	N.A.	8,932,420	848,580	9,781,000
<b>Total Grant Resources</b>							

a) Refer to the Fee Policy for GEF Partner Agencies

<sup>4</sup> For GEF Project Financing subtotal up to \$2 million, PMC could be up to 10%; above \$2 million, PMC could be up to 5%. PMC should be charged proportionately to focal areas based on focal area project financing amount in Table D below.  
GEF6 CEO Endorsement /Approval Template-August 2016

**E. PROJECT’S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS<sup>5</sup>**

Corporate Results	Replenishment Targets	Project Targets*
4. Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO <sub>2e</sub> mitigated (include both direct and indirect)	25.336 million tons CO <sub>2e</sub>

\*This is sum of the estimated lifetime direct GHG emission reductions from the demonstrations under the PSBEE Project and the estimated lifetime consequential (indirect) GHG emission reductions based on the bottom-up approach.

**F. DOES THE PROJECT INCLUDE A “NON-GRANT” INSTRUMENT? No**

(If non-grant instruments are used, provide an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF Trust Fund) in Annex D.

**PART II: PROJECT JUSTIFICATION**

**A. DESCRIBE ANY CHANGES IN ALIGNMENT OF THE PROJECT DESIGN WITH THE ORIGINAL PIF<sup>6</sup>**

*A.1. Project Description*

The project conceptual design and the proposed Outcomes as presented in the GEF-approved PIF remain the same as in the Project Document. However, there were some minor changes in the grouping of outputs in Component 2, and adjustments in the co-financing amounts due to the increased co-financing that was committed to the project since the time of PIF formulation.

Expected Outputs		Rational for Change in PIF Outputs/Activities in the ProDoc
GEF-Approved PIF	Project Document	
Component 2  12 Outputs (3 <sup>rd</sup> to 12 <sup>th</sup> Outputs)	Component 2: Same as in approved PIF  “TA” and “Inv” outputs have been delineated.  4 <sup>th</sup> to 7 <sup>th</sup> Outputs are now covered in Output 2.1.3  8 <sup>th</sup> and 9 <sup>th</sup> Outputs are now covered in Output 2.1.4  10 <sup>th</sup> and 12 <sup>th</sup> Outputs are now covered in Outputs 2.1.2, 2.1.3 and 2.1.4.	Per GEFSec advice, activities that require purchase of hardware to deliver specific outputs can be classified as “investment” activities. Hence, two Component 2 outputs that require hardware purchases have been delineated as “Inv” outputs, and the rest, “TA” outputs.  Two reasons for merging some of the output items are: (1) The output items are related; and, (2) for convenience and ease of implementation of the relevant activities to deliver each output. These outputs are all contributing to the design, development and implementation of the proposed energy management information system (EMIS) for public buildings These outputs are both contributing to the design, development and implementation of the energy savings measurement and verification system (ESMVS). These outputs are mainly on the performance evaluation and sustainable follow-up planning for the building energy audit system (Output 2.1.2); EMIS (Output 2.1.3); and ESMVS (Output 2.1.4).
Components 3 & 4  7 <sup>th</sup> Output: Established EC&EE/LC management centers in	Components 3 & 4: Same as in approved PIF  7 <sup>th</sup> Output moved to Component 4; merged with Output 4.2.2:	The centers should also be education training centers as proposed for Component 4. The 5 centers in the selected LGOA regions will not only be providing

<sup>5</sup> Update the applicable indicators provided at PIF stage. Progress in programming against these targets for the projects per the *Corporate Results Framework* in the *GEF-6 Programming Directions*, will be aggregated and reported during mid-term and at the conclusion of the replenishment period.

<sup>6</sup> For questions A.1 –A.7 in Part II, if there are no changes since PIF, no need to respond, please enter “NA” after the respective question. GEF6 CEO Endorsement /Approval Template-August 2016

Expected Outputs		Rational for Change in PIF Outputs/Activities in the ProDoc
GEF-Approved PIF	Project Document	
5 LGOAs in 2 to 3 regions.	Established public sector EC&EE/LC management cum education training centers in the different climate regions.  Component 4 “TA” and “Inv” outputs have been delineated.	technical advisory services to public buildings in these regions on EC&EE/LC technology applications, but also serve as training centers in the field of EC&EE/LC.  Per GEFSec advice, activities that require purchase of hardware to deliver specific outputs can be classified as “investment” activities. Hence, two Component 4 outputs that require hardware purchases have been delineated as “Inv” outputs, and the rest, “TA” outputs.
All Other Items in GEF-approved PIF	Same as in GEF-approved PIF	

A.2. *Child Project?* If this is a child project under a program, describe how the components contribute to the overall program impact. N/A

A.3. *Stakeholders.* Identify key stakeholders and elaborate on how the key stakeholders engagement is incorporated in the preparation and implementation of the project. Do they include civil society organizations (yes  /no )? and indigenous peoples (yes  /no )? <sup>7</sup>

The main stakeholders of this project are the National Government Offices Administration (NGOA), the local government office administration (LGOA) units in the provinces, and the NGOA-, and LGOA-administered public buildings in the country. The other stakeholders are government agencies involved in the health and education sectors, as well as the pertinent standards and certification agencies. Also involved are those in the building construction industry, and in the private sector, mainly banks/financial institutions, ESCOs and engineering service companies. This project will also work closely with relevant non-governmental organizations/civil society organizations to improve the future implementation of Component 4 activities in the outreach/training/international technical exchange activities.

A.4. *Gender Equality and Women's Empowerment.* Elaborate on how gender equality and women’s empowerment issues are mainstreamed into the project implementation and monitoring, taking into account the differences, needs, roles and priorities of women and men. In addition, 1) did the project conduct a gender analysis during project preparation (yes  /no )?; 2) did the project incorporate a gender responsive project results framework, including sex-disaggregated indicators (yes  /no )?; and 3) what is the share of women and men direct beneficiaries (women 50%, men 50%)? <sup>8</sup>

The proposed GEF project presents opportunities for the involvement of women working in both management and technical departments of public sector agencies/institutions who can play important roles in the operation and management of installed and operated energy management, monitoring, analysis and evaluation, and information dissemination systems in the NGOA and LGOAs. The project will not only provide an opportunity to further assess the role of women in deployment of low carbon technologies and mitigation options, and come up with gender-sensitive policies in the energy consuming operations and processes within the public sector in China, but will definitely be cognizant of the potential contributions of women in the management and implementation of climate change

<sup>7</sup> As per the GEF-6 Corporate Results Framework in the GEF Programming Directions and GEF-6 Gender Core Indicators in the Gender Equality Action Plan, provide information on these specific indicators on stakeholders (including civil society organization and indigenous peoples) and gender.

<sup>8</sup> Same as footnote 8 above.

mitigation measures. It should be noted that in the design and preparation of this project, adequate consideration shall be accorded to women and indigenous people if there are opportunities to involve them.

*A.5 Risk.* Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.(table format acceptable):

During the project design phase, the same set of risks that were identified during the PIF stage are still present although the overall general status of these is improving. The risk “The selected public sector sub-sector may not like to carry out the pilot/demo activities”, has been elaborated further by stating 2 related risks that have to be monitored during project implementation: (a) Inadequate communication and cooperation between national and local government institutions to effectively plan and implement EC&EE/LC measures in the public buildings sector; and, (b) Technical capacity on EC&EE/LC in the public buildings sector is inadequate. The overall risk level remains low to medium.

*A.6. Institutional Arrangement and Coordination.* Describe the institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.

The implementation of the PSBEE project will be fully coordinated with the other GEF projects implemented in China that are related to energy efficiency. The project team will also coordinate with the relevant NGOA agency in-charge of energy conservation matters, and the designated departments of the Local Government Office Administration in the provinces on the implementation of their ongoing/planned building energy efficiency programs/systems particularly in the implementation of some of its activities related to the PSBEE Project. As designed, this is not only meant to make use of potential synergies, implement the demonstration projects, ensure complementarity and building on best practices and lessons learned, but also to enhance these with the inclusion of incremental activities. The project team will also coordinate the project activities implementation with the relevant stakeholders, as well as with the UNDP-Bangkok Regional Hub in Bangkok, Thailand. The UNDP country office in China will be fully involved in the project implementation through its participation in the various stakeholder and co-financing consultation meetings and technical workshops during project development, and in the multipartite review meetings.

The project management office (PMO) that will be established by the NGOA will coordinate with implementers of other GEF and non-GEF funded projects that are related to the proposed project. This is for the purpose of exploring and possibly making use of potential synergies, and for ensuring complementarities and building on best practices and lessons learned. The design of the proposed project will fully coordinate with the EC&EE projects implemented in China.

- All NGOA ongoing and planned projects on EC&EE in public sector buildings –Relevant units within the NGOA that are in-charge of these projects will be consulted to determine how these projects will be utilized as the main baseline activities of the proposed GEF-project.
- Establishment of Measurement and Verification System for Energy Efficiency in China (EMVSEE) - The project team will interact and consult the implementers of EMVSEE project (particularly those working on energy measurement and verification standards) during the project design and implementation.

Additional Information not well elaborated at PIF Stage:

*A.7 Benefits.* Describe the socioeconomic benefits to be delivered by the project at the national and local levels. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF)?

The anticipated socio-economic benefits from the implementation of the PSBEE will be derived from the improved building energy efficiency that will be facilitated by the enforced enhanced policy and regulatory frameworks that will be formulated under the project, the influence that the EC&EE/LC technology application demonstrations that will be implemented, as well as the capacity that will be enhanced within the sector to develop, design, implement and operate energy conserving and low carbon systems in public buildings. The removal of barriers that will facilitate the widespread application of building energy efficiency (from energy savings derived from the energy efficient management and widespread operations).

At the national level, the energy consumption in the growing public buildings sector is a growing concern. Hence, the need to make new and existing public buildings more energy efficient. As presented and discussed during the PIF stage, EC&EE and LC technologies/techniques have the potential of being cost effective solutions in improving the energy utilization performance of public buildings. Available data from the NGOA shows that in 2010 and 2012 are 195 kWh/m<sup>2</sup>-yr and 180 kWh/m<sup>2</sup>-yr, respectively, which are high compared to other commercial buildings. The national benefit obviously would be in energy cost savings for the national and local governments that provide the yearly annual operating budgets (including that for cost of energy and water usages), through reduced electric power and fuel bills with investments that have short payback periods. Such cost savings, if possible in the government budget and expenditure systems, be used in other areas that can improve the service delivery of each of these public buildings (at least for now, in office, hospital and school buildings). Improved service provision, as a result, can help improve local businesses that are serviced by these government offices, better health services, and better education, which can lead to greater stimulation of the economy in other sectors. RE can improve the lives and potentially incomes of local people who newly gain access to electricity. The project will stimulate engagement of private sector entities that can provide technical services to public buildings (e.g., engineering service companies, ESCOs, architectural firms, building service companies) to sustain/maintain the EC&EE/LC systems that public buildings will install and operate in the pursuit of achieving more rational use of energy in their buildings. There are of course other indirect socio-economic benefits that this project may trigger. For example, the demonstrations that will be carried out will involve building practitioners and the local building industry, and that can provide potential employment for qualified professional and technical women in China. Please refer to Annex N of Project Document. It also goes without saying that the improved energy utilization efficiency in public buildings will indirectly reduce investments on additional power generation and distribution systems. The successful implementation of the proposed GEF project is expected to bring the following indirect socio-economic benefits: (a) Enhancement of the development of small and medium-sized enterprises within the building industry supply chain; (b) Improvement of the low-carbon and sustainable development of Chinese cities and towns where most of the public buildings are located; and, (c) Improved employment level of Chinese women, which will be made possible through the implementation of professional training and skills enhancement under the project.

#### *A.8 Knowledge Management.*

The Knowledge Management (KM) Strategy of the PSBEE Project will be one that addresses the barrier related to the low level of awareness and knowledge of the public buildings sector in China. This includes the concepts, principles and technologies and practices associated with energy conservation, energy efficiency and low carbon (EC&EE/LC) technologies, as well as low carbon development. The expected outputs that will be delivered by the project will bring about improved awareness and attitude towards EC&EE/LC technology applications in the public buildings sector.

The KM strategy involves the monitoring/tracking, evaluating and documenting the results of the project activities, and sharing the information generated not only to the public buildings sector in China, but also to building practitioners in the country's building industry, as well as to the buildings sector in other countries. Part and parcel of the project are activities involving the gathering of observed and recorded results of specific project activities (e.g., demonstrations, pilots, and capacity building activities), processing, analyzing and uploading them into a Public Buildings Energy Management



Information System (PBEMIS) Database. Gathered and processed information from the demonstrations will also be used in the preparation of each demo project profile that will later on be disseminated to the target beneficiary sectors and entities in China and interested developing countries (through South-South Triangular Cooperation). The activities that are intended to promote the project are also intended to enhance the knowledge of the target beneficiaries about the goal and objective, expected outcomes and outputs of the project thereby enhancing their enthusiasm and ownership of or belongingness to, the project and encourage them to cooperate in the delivery of the target outputs. Moreover, the KM strategy also serves to bridge the communication gaps between the source and the recipient of the knowledge on EC&EE/LC applications.

Actually, knowledge management is part and parcel of the PSBEE Project design. Component 4 will produce a number of knowledge products will be developed. Among the key KM products under this component are a “building energy technology information exchange (BETIX) system that will enable sharing of latest EC&EE and LC technology and market development information among public building managers/administrators, building practitioners in China and building materials and building energy technology developers and suppliers in other countries. Another knowledge product is a set of established public sector EC&EE/LC management cum education training centers in the different climate regions of the country. These are strategically sited centers for the promotion, technical assistance and capacity development in the field of EC&EE/LC technology applications in public buildings. The capacity development program (in-country trainings, and study tours abroad) will also produce several KM products among them are the training materials, information and training kits.

## **B. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:**

*B.1 Consistency with National Priorities.* Describe the consistency of the project with national strategies and plans or reports and assessments under relevant conventions such as NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, etc.:

The proposed project is consistent with China’s Second National Communications to the UNFCCC, particularly in specific actions and policies related to energy conservation applications in supporting economic and social development. It will also support the achievement of targets stated in China’s Nationally Determined Contributions (NDCs). Moreover, this is consistent with China’s national energy strategy and planning. China’s 13th Five-Year Plan (2016 to 2020) encourages, among others low carbon development and “green” lifestyle, raising energy efficiency, as well as market-oriented reforms. Specifically, the project is in accord with the following government issued circulars, laws and programs:

- Circular on Strengthening the Resources Saving of Government Bodies in 2006
- The Law of the People’s Republic of China on Energy Conservation
- Regulations on Energy Conservation by Public Sector
- 13th Five-Year Plan of Energy Conservation by Public sector
- Opinions on Accelerating the Development of Energy Conservation and Environmental Protection Industry (GuoFa (2013) No. 30)

The project shall help facilitate the realization of expected energy savings and associated greenhouse gas emission reductions from the public sector. In this regard, the proposed project is fully consistent with China’s national strategies and will contribute to the achievement of the national energy saving and climate change mitigation targets.

## **C. DESCRIBE THE BUDGETED M & E PLAN:**

To track the successful completion of the project activities and delivery of the intended outputs, the continuous monitoring of project components and activities towards achieving the expected outcome and outputs will be done. This will be carried out in line with the UNDP-GEF monitoring and evaluation (M&E) system. A formal M&E Plan will be adopted during the project inception corresponding to a full-scale project to track the activities and contributions of the activities by all the project partners, in terms of both in-cash and in-kind co-financing contributions to augment the GEF funds. These M&E findings will be reported on in the project's two in-depth independent reviews during the mid-term and towards the end of the project.

The table below shows the project's M&E Plan. The M&E will be conducted at multiple levels. At the most basic level, the PMO will be responsible for tracking project indicators and preparing quarterly reports and initial drafts of annual project reports. The PMO will also carry out site visits to the project demos to monitor their progress. The PSC will meet at least once every six months to monitor and evaluate project progress, taking actions as necessary. In addition, a mid-term review will be conducted after about two years of implementation and a terminal evaluation as the project is nearing its close. These evaluations will be carried out by parties who have not previously been involved with the project. The project's M&E plan and indicators will be finalized at the time of inception.

GEF M&E requirements	Primary responsibility	Indicative charged to the Project Budget <sup>9</sup> (US\$)		Time frame
		GEF grant	Co-financing	
<b>Inception Meeting/Workshop</b>	UNDP Country Office	20,000	30,000	Within 2 months of ProDoc signing
<b>Inception Report</b>	Project Manager	10,000	None	Within 2 weeks of inception meeting
<b>Standard UNDP monitoring and reporting requirements as outlined in the UNDP POPP</b>	UNDP CO	None	None	Quarterly, annually
<b>Monitoring of indicators in project results framework</b>	Project Manager	20,000 (US\$ 5,000/year)	40,000	Annually
<b>GEF Project Implementation Report (PIR)</b>	Project Manager and UNDP CO and UNDP-GEF team	None	None	Annually
<b>NIM Audit as per UNDP audit policies</b>	UNDP CO	16,000 (US\$ 4,000/year)	20,000	Annually or as per UNDP Audit policies
<b>Lessons learned and knowledge generation</b>	Project Manager; relevant contractors and consultants	Covered by various capacity development and information dissemination activities	Covered by capacity development & information dissemination activities	Annually
<b>Monitoring of environmental and social risks, and corresponding management plans</b>	Project Manager UNDP CO	None	20,000	On-going

<sup>9</sup> Excluding project team staff time and UNDP staff time and travel expenses.  
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GEF M&E requirements	Primary responsibility	Indicative charged to the Project Budget <sup>9</sup> (US\$)		Time frame
		GEF grant	Co-financing	
Addressing environmental and social grievances	Project Manager UNDP CO, UNDP BPPS as needed	None for time of project manager and UNDP CO	As needed	As needed
Project Steering Committee (PSC) meetings	PSC UNDP CO Project Manager	40,000 (US\$ 10,000 per year)	25,000	At minimum annually
Supervision missions	UNDP CO	None <sup>10</sup>	25,000	Annually
Oversight missions	UNDP-GEF team	None	As needed	Troubleshooting as needed
Knowledge management	Project Manager	Covered by capacity development & information dissemination activities	Covered by capacity development & information dissemination activities	On-going
GEF Secretariat learning missions/site visits	UNDP CO, Project Manager and UNDP-GEF team	None	10,000	To be determined.
Mid-term GEF Tracking Tool	Project Manager, MTR consultants	10,000	10,000	Before mid-term review mission takes place.
Independent Mid-term Review (MTR) and management response	UNDP CO, PMO, and UNDP-GEF team	55,000	35,000	Between 2 <sup>nd</sup> and 3 <sup>rd</sup> PIR.
Terminal GEF Tracking Tool	Project Manager, TE consultants	10,000	10,000	Before terminal evaluation mission takes place
Independent Terminal Evaluation (TE) included in UNDP evaluation plan, and management response	UNDP CO, PMO, and UNDP-GEF team	55,000	35,000	At least three months before operational closure
Translation of MTR and TE reports into English	UNDP Country Office	NA	NA	----
<b>TOTAL indicative COST</b> Excluding project team staff time, and UNDP staff and travel expenses		<b>236,000</b>	<b>260,000</b>	----

<sup>10</sup> The costs of UNDP Country Office and UNDP-GEF Unit's participation and time are charged to the GEF Agency Fee.  
GEF6 CEO Endorsement /Approval Template-August 2016


### **PART III: CERTIFICATION BY GEF PARTNER AGENCY(IES)**

#### **A. RECORD OF ENDORSEMENT<sup>11</sup> OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):**

<b>NAME</b>	<b>POSITION</b>	<b>MINISTRY</b>	<b>DATE</b>
Wensong Guo	GEF Operational Focal Point	International Dept., Ministry of Finance	6 Aug 2014

#### **A. GEF Agency(ies) certification**

**This request has been prepared in accordance with GEF policies<sup>12</sup> and procedures and meets the GEF criteria for CEO endorsement under GEF-6.**

<b>Agency Coordinator, Agency Name</b>	<b>Signature</b>	<b>Date</b>	<b>Project Contact Person</b>	<b>Telephone</b>	<b>Email Address</b>
Adriana Dinu UNDP/GEF Executive Coordinator		June 8, 2017	Manuel L. Soriano Sr. Tech. Advisor Energy, Infrastructure, Transport & Technology	+66-2-304- 9100 Ext 2720	manuel.soriano@undp.org

<sup>11</sup> For regional and/or global projects in which participating countries are identified, OFP endorsement letters from these countries are required even though there may not be a STAR allocation associated with the project.

<sup>12</sup> GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, and SCCF  
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**ANNEX A: PROJECT RESULTS FRAMEWORK** (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

Please refer to Part VI: Project Results Framework in the PSBEE Project Document, pp. 51-54.

**ANNEX B: RESPONSES TO PROJECT REVIEWS** (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

**Responses to STAP Comments (26 September 2015)**

Comment	Response
<p>2. It is assumed the proposed energy efficiency measures, to be based on "building energy performance standards (and labeling)" relate only to fixed lighting, HVAC and the building envelope, and not improved efficiency of the appliances used within the buildings. However, it is not clear what is included and what is not.</p>	<p><u>Before PPG Exercise:</u> The assumption is partly correct if it infers improving the efficiency of the appliances used in buildings. The project will promote the efficient utilization of the installed appliances/equipment (lighting, HVAC, and other energy-consuming units) in the buildings, as well as energy efficient building envelope. While building energy performance standards The energy efficiency measures will also involve the use of energy efficient appliances. The EE appliances/equipment that will be covered by the project will be identified during the project design (e.g., in the demonstrations), and specified in the Project Document.</p> <p><u>After PPG Exercise:</u> The different EC&amp;EE/LC demonstrations were identified and preliminary design of these demos were done. For each demo, the pertinent technology(ies) involved were identified including the major hardware (equipment) and software (controls) components, for purposes of estimation of the required investment costs. These are summarized in Annex K (Description of EC&amp;EE and LC Demonstrations) in the Project Document.</p>
<p>3. Similarly renewable energy (RE) is mentioned at times in the PIF (such as on page 11: "EC&amp;EE (and RE) technology application demonstrations"). So is the installation of solar water heaters or solar PV systems (including building integrated systems) also a component? Again it is unclear what is being included.</p>	<p><u>Before PPG Exercise:</u> The project will promote low carbon technologies and techniques. Hence, these will include energy efficiency, energy conservation and where applicable renewable energy. Yes solar PV systems and thermal systems will be included inasmuch as there are public buildings that are interested in doing these to displace part of their electricity consumption and gas consumption for water heating. In public buildings in the provinces, there are also potentials for using biomass/biogas and this will also be explored during the detailed project design.</p> <p><u>After PPG Exercise:</u> Among the low carbon technology demonstrations that are included in the project design are the following:</p> <ul style="list-style-type: none"> <li>• Installation of solar PV power generation system – integrated in existing electrical system (360 kWe)</li> <li>• Installation of solar water heating system – integrated in the existing hot water system (500 kWth)</li> <li>• Installation of heat pumps (Geothermal/Air) – integrated into hot water system (30 tons &amp; 60 tons)</li> <li>• Utilization of organic waste material for biogas generation for use in hot water production (630 kW)</li> </ul>
<p>4. In Table B, Component 1 there are "3 to 5 demonstrations on the application of EC &amp; EE</p>	<p><u>Before the PPG Exercise:</u> Thank you for the advice regarding the clarifications that have to be done during the project design. The numbers of demonstrations/pilots are obviously tentative at the PIF stage. In Component 1, the idea is to pilot (hence not</p>

Comment	Response
<p>policies and systems"; Component 3 includes 5 selected EC&amp;EED/LC financing scheme projects in "3 to 5 cities or regions"; 5 management centres established in 2 to 3 regions; and 5 projects implemented and financed in "2 to 5 cities or regions". Yet these do not reconcile with the text for Component 1 (page 9) that does not mention "demonstrations". Also Component 3 text states that "There will be 15 demonstration buildings" and then provides details. May need clarifying during project preparation.</p>	<p>"demonstration") some of the enhanced policies that will enable the public buildings in successfully implementing and benefitting from the application of appropriate EC&amp;EE/LC projects.</p> <p>The plan is also to showcase EC&amp;EE/LC technology applications in public office, hospital and school buildings in selected provinces. In addition, there will also be demonstration (focusing on the financing using market-based financing mechanisms) of EC&amp;EE/LC projects in the same types of buildings (at least 5).</p> <p>The exact number of pilots/demonstrations will be established during the project design, and the exact numbers will also provide guidance on how much incremental funding will be allocated to these demonstration activities.</p> <p><u>After the PPG Exercise:</u> The number of policy pilots that will be implemented is five: (a) Energy monitoring and reporting of public sector buildings – provinces; (b) Energy savings measurement &amp; verification system for public sector buildings – 2 provinces; and, (c) Building energy auditing in the public building sector – 1 province. (Project Document - Summary of Pilots, Output 1.4, pp. 17-18)</p> <p>The number of EC&amp;EE/LC demonstrations is 20 (Project Document – Annex K, pp. 114-116)</p>
<p>5. Table C lists a \$10M "Grant" from Energy Service Companies in the private sector. Is this in fact the "investment" hoped for from the private sector as in footnote 23?</p>	<p><u>Before PPG Exercise:</u> Footnote 23 describes the strategy to get project partners from the private sector like ESCOs. The estimated US\$ 10M grant from ESCOs is in the form of financing of EC&amp;EE/LC projects that public building owners or managers will implement as part of PSBEE project activities either as demonstration or a replication.</p> <p><u>After PPG Exercise:</u> The implementing partner (NGOA) was able to secure initial co-financing from private sector entities (inclusive of ESCOs) in the amount of US\$ 16 million.</p>
<p>6. Footnote 18 outlines a number of existing building standards from which "The most appropriate scheme (or combination) will be used." It is not clear what criteria will be used for this selection so the selection should be justified in the Project Document to be submitted for CEO endorsement. A useful link is a recent initiative from the Global Building Performance Network that has developed a Buildings Energy Code portal: <a href="http://www.gbpn.org/beet-3/?utm_source=newsletter&amp;">http://www.gbpn.org/beet-3/?utm_source=newsletter&amp;</a></p>	<p><u>Before PPG Exercise:</u> Thank you for the suggestion regarding the Global Building Performance Network. This will be consulted during the detailed PSBEE design, particularly in the activities concerning the establishment of new building EE standards. The mention of the various building standards from other countries that can be used as potential references was mainly due to a comment on the draft PIF of such purpose. Nonetheless, these various building standards, and perhaps others that maybe suggested, will be evaluated comprehensively as to their applicability in the public buildings in China.</p> <p><u>After PPG Exercise:</u> The assessment of applicability, and the procedures for the adoption of specific aspects of current building energy standards and best practices (on the performance, design, construction and installation of energy systems) that are in place in other countries are among the major activities identified to deliver a developed improved and updated public sector building energy standards (Output 1.6).</p>

Comment	Response
<a href="#">utm_medium=email&amp;utm_campaign=Greater%20Energy%20Savings%20from%20Buildings:%20New%20Web%20Portal%20to%20Support%20International%20Collaboration%20on%20Building%20Energy%20Codes</a>	<p>This is output (EE Public Buildings Standards) is an updated code of practice for the application EE features, as well as EE and RE (where applicable and feasible) systems in public buildings. The enforcement of the EE Public Buildings standards will be widely promoted since this is viewed as one very essential incentive that will encourage and motivate public buildings to seriously embrace sustainable energy principles and invest on EC&amp;EE/LC initiatives.</p>
<p>7. Is there a target for when the standard will be introduced and what share of buildings will meet it and by when?</p>	<p><u>Before PPG Exercise:</u> For now there is no target set yet. But for sure this will be ascertained during the project design as well as the timing of the formulation of the revised building EE standards and their implementation. In addition to these reference building standards, the information that will be generated from the implementation of the planned energy management information system will also be used to come up with the realistically achievable targets.</p> <p><u>After PPG Exercise:</u> The alternative scenario that was considered in the project is expected to bring about an average overall specific energy consumption in the public buildings sector in China of 16.9 kce/m<sup>2</sup>/yr or 138 kWh/m<sup>2</sup>/yr.</p>
<p>9. Section 1.5: The energy savings of 11.4% per year "during the period 2015 - 2025" STAP assumes is a) for only the demonstration projects and b) ambitious given the projects will not start before 2016 at the earliest. The usual metric for energy use in commercial buildings is kWh/m<sup>2</sup> floor area. Would be helpful to know what the current average metric is for all public sector buildings (the baseline) and what the target will be for the demonstration buildings in the alternative scenario?</p>	<p><u>Before PPG Exercise:</u> The estimate is from the forecast energy consumption (million tce) and associated GHG emissions (million tons CO<sub>2</sub>) in the public buildings sector in China. The forecasts for the stated period is based on trend analyses of data on historical annual energy consumption and GHG emissions from the sector, as provided by the NGOA. The estimation was done back in 2014.</p> <p>The estimates for the GHG emission reductions should have been based on the demonstration projects that will be implemented. However, at this stage of project development (PIF), there is no certainty yet as to how many and what type of demos will be carried out.</p> <p>There is a dearth of data on specific energy consumption (SEC) of public buildings in China. Building SEC information from NGOA shows that the average annual SEC of public buildings in 2012 was about 28 kce/m<sup>2</sup>-yr and 24 kce/m<sup>2</sup>-yr. From these, estimates of the public buildings total floor area were also taken. From the trend analysis of the NGOA data, the estimated average public buildings SEC by end 2017 (assuming the project starts in 2017) is 21.5 kce/m<sup>2</sup>-yr assuming a business-as-usual scenario. Considering the same scenario, by end of project (2020), the average public buildings SEC would be about 20.3 kce/m<sup>2</sup>-yr. Under an alternative scenario, this would be about 16.9 kce/m<sup>2</sup>-yr.</p> <p><u>After PPG Exercise:</u> Based on the trend analysis of updated historical annual energy consumption in the public buildings sector and the GHG emission reduction estimates (based on demos and anticipated demo replications), the potential level of average overall specific energy consumption (SEC) that can be</p>



Comment	Response
	realized is 137 kWh/m <sup>2</sup> /yr, as compared to a business-as-usual scenario average overall SEC of 165 kWh/m <sup>2</sup> /yr.
<p>10. The energy savings of 11.4% per year "during the period 2015- 2025" I assume is a) for only the demonstration projects and b) ambitious given the projects will not start before 2016 at the earliest. The usual metric for energy use in commercial buildings is kWh/m<sup>2</sup> floor area. Would be helpful to know what the current average metric is for all public sector buildings (the baseline) and what the target will be for the demonstration buildings.</p>	<p>This is the same comment as the previous one. The response is also the same.</p>
<p>11. The abatement cost of \$0.56/t CO<sub>2</sub> for 4.47 Mt CO<sub>2</sub> cumulative emission reductions over the 4 year project term is encouraging and good that it will be tracked as the demonstration projects evolve. What emission factors were used for these calculations for both electricity and buildings heating? How the demonstration buildings are currently heated (and cooled)? There are major differences in mitigation potential if a building is heated by coal, natural gas, electricity or if connected to district heating schemes.</p>	<p>The grid emission factor that was used, as per the NGOA's data is 1.049 tons CO<sub>2</sub>/tce. This is already combined for electrical and thermal energy use. This is also based on the historical annual fossil fuel consumption data of the public buildings sector as provided by NGOA.</p> <p>Standard Values for 1 tce  ---&gt; 1 ton of coal  ---&gt; 826.8 liters of petroleum fuels (oil)  ---&gt; 890 m<sup>3</sup> of natural gas @ 33 MJ/m<sup>3</sup>  ---&gt; 8,141 kWh electricity  1 tce = 29.39 GJ = 27.87 MMBTU</p> <p><u>Before PPG Exercise:</u> The demonstration buildings are not yet identified. That will be done during the PPG phase. Suffice to say that the demo buildings will be from each climate regions of the country to take into account the difference in the heating schemes and the energy carriers used for such schemes.</p> <p><u>After PPG Exercise:</u> The type of public buildings (office, hospital and school) in each climate zone of the country have been identified. The EC&amp;EE/LC that will be showcased in each demo is based on what the building management has planned to implement in the building. The demonstrations are actually enhanced designs (incorporating more or improved EC&amp;EE/LC features) of what each demo host building has initially planned. The choice of EC&amp;EE/LC technology to showcase was based on the building systems/services/facilities that consume the largest portions of the total building energy consumption. The final line-up of demos was mainly based on the results of the pre-feasibility analyses that were done for each demo.</p>
<p>12. Given the potential to reduce emissions for relatively low cost, it is concerning that</p>	<p><u>Before PPG Exercise:</u> The projections are not based on the demonstrations since these demos have yet to be identified and specified during the PPG phase. Hence, the projections, as earlier stated, are based on the trend analyses made on the</p>

Comment	Response
<p>administrative actions on EC&amp;EE in the public building sector during the 12th Five Year Plan have "so far realized modest achievements". However, Section 1.2: Baseline scenario states the growth in baseline emissions from energy consumption for public buildings of 2.54% per year during 2015-2025 (or 192 Mtce/yr and 573 Mt CO<sub>2</sub>/yr) could be reduced to was reduced to 2.10% per year (or 186 Mtce/yr and 552 Mt CO<sub>2</sub>/yr) as a result of the existing EC&amp;EE program of the national government office administration. So how does a reduction of 21 MtCO<sub>2</sub>/yr for the whole sector correlate with the projected ~1.12 MtCO<sub>2</sub>/yr for just the 15 demonstrations? This needs clarifying at the PPG stage. Further, there is an error in reporting of GEBs in Section 1.5: total project savings for the entire project period of 4 yrs should be 4.47 MtCO<sub>2</sub>.</p>	<p>historical annual energy consumption and GHG emissions from the public buildings sector. These are data provided by the NGOA. The projections will however be adjusted based on the demonstrations. Note that the consequential emission reductions (based on the top-down approach) will also make use of the sectoral energy consumption and GHG emission projections during the 10 year influence period after the completion of the PSBEE Project.</p> <p>The 4.47 million tons CO<sub>2</sub> emission reduction is not just during the 4 year PSBEE project implementation period. This value will be adjusted during the PPG phase, by considering the actual number of demonstrations and replications of EC&amp;EE/LC technology applications that will be implemented. The amount to be reflected in Part I, Sec. F of the CEO Endorsement Request Document, will be based on the lifetime direct and direct post project emission reductions from these demonstrations that will be implemented, and replications that will be assisted and influenced, during the PSBEE project period.</p> <p><u>After PPG Exercise:</u> The GHG emission reduction estimates were done based on the demos and from the anticipated replications of the demos. The presentation of the GHG emission reduction estimations (lifetime direct, lifetime direct post-project, and consequential) is in Annex L of the Project Document.</p>
<p>13. Of greater concern is the table listing seven previous GEF-funded EE projects in China. There seems to be some overlap with the proposed project. Has an evaluation of the outcomes of these seven projects been undertaken, and are there lessons to be learned before making further investments given only "modest achievements" have resulted? Detailed assessment of these lessons learned is required at the project submission stage.</p>	<p><u>Before PPG Exercise:</u> During the time of the PIF development in mid-2014, these projects are still under implementation, although some of them are in their penultimate year of implementation. The design of the PSBEE Project can make use of whatever lessons learned from these 7 GEF-funded EE projects in China, as well as any new EE/RE projects that may be online by the time this project will be up and running, hopefully by 2017. The proposed GEF project can build on, and perhaps where possible incorporate relevant enhancements, to these projects (recently completed and ongoing). The project activities that can be linked to these ongoing projects could be: (1) on aspects that are not, and will not be, covered by these projects; (2) additional features that can be done to the specific activities of these ongoing projects to enhance the achievement of GEBs and national benefits; and, (3) follow-up interventions to enhance the realization of building SEC targets, e.g., through joint implementation with owners, implementers or stakeholders of such project on common activities such as on capacity development on the cost-</p>

Comment	Response
	<p>effective application of EC&amp;EE/LC technologies in public buildings.</p> <p><u>After PPG Exercise:</u> During the project implementation, the PMO will coordinate with the implementers of the following projects in regards:</p> <p>ADB - Hebei Energy Efficiency Improvement and Emission Reduction Project - <i>planning, implementation and monitoring of public building EC&amp;EE activities in Hebei Province and possibly in other provinces similar to Hebei by making use of the principles, techniques and strategies that will be applied in improving EE in large industries that are applicable in public buildings.</i></p> <p>WB - Urban-Scale Building Energy Efficiency and Renewable Energy - <i>planning, implementation and monitoring of demonstration building EC&amp;EE activities financed through market-based financing mechanisms or involve the promotion of commercial bank/financial institution financing of EC&amp;EE in public buildings, particularly on EC&amp;EE techniques and strategies applied in this project in improving policy making and implementation of low-carbon and EE technologies in public and commercial buildings.</i></p> <p>UNDP - Enabling Solid State Lighting Market Transformation Promotion of Light Emitting Diode Lighting - <i>planning, implementation and monitoring of demonstration building EC&amp;EE projects that will showcase the application of energy efficient LED lamps and LED lighting systems in public buildings.</i></p> <p>UNDP - Promoting Energy Efficient Electric Motors in Chinese Industries - <i>planning, implementation and monitoring of demonstration building EC&amp;EE projects that will showcase the application of energy efficient motors and motor systems in public buildings.</i></p>

### Responses to Council Members Comments (USA, 14 November 2015)

*(Includes responses before and after the PPG Exercise)*

#### **6930 Energy Efficiency Improvement in Public Sector Buildings**

*The United States registered an abstention on this GEF Concept in light of its policies for certain development projects, As the project is further developed, we encourage UNDP to respond to all of the STAP technical comments, including its recommendation to build on lessons-learned from previous GEF energy efficiency focused interventions in China. Further, we encourage UNDP to explore how the policy and regulatory framework may be able to introduce reforms that will enable public buildings to keep the savings from installed energy measures across fiscal years to pay for upfront installations over time and make these efforts more sustainable over the long-term.*

#### **Response:**

Before PPG Exercise: The comments provided by the STAP will be addressed during the design and development of the project. Specific recommendations from the STAP, where applicable, will be considered and taken into account in the design of the relevant project activities. The project development team established by the project proponent (National GEF6 CEO Endorsement /Approval Template-August 2016

Government Office Administration) will review lessons learned and appropriate practices from the implementation of past and ongoing GEF-funded energy efficiency projects in China, particularly those that have components on improving energy efficiency in buildings. These will all be taken into account in the design of the project activities and the project implementation arrangements.

After PPG Exercise: The comments and recommendations of the STAP have been addressed adequately in the design of the project activities. Discussions with the implementers of 4 ongoing GEF-funded projects were done and coordination arrangements will be made during the implementation of the specific activities where cost-effective collaboration and synergy can practically be realized. Please refer to the After PPG Exercise responses to the STAP comments.

Before PPG Exercise: The suggestion to introduce reforms in the public buildings sector policy and regulatory frameworks will be proposed in the project. Specifically, activities on the study, formulation, piloting, promotion for approval and enforcement of policies (and implementing rules and regulations) on the retention of cost savings from energy conservation and energy efficiency (EC&EE), or waste reduction initiatives of government institutions/agencies (housed in government-owned buildings), will be designed and included in the project. The main justification for such policy changes would be to enable these public sector entities to sustainably finance their own EC&EE activities. The successful piloting of the proposed reforms in selected provinces, can also be the basis for the development of the sustainable follow-up plan for their replication in the public sector in other provinces of the country, after the end of the GEF project.

After PPG Exercise: The proposed activities in Component 1 of the project are specifically to collectively address the barriers related to the inadequate policies and regulations that help promote and support EC&EE applications and practices in public sector buildings in China. The study, formulation, piloting, promotion for approval and enforcement of policies (and implementing rules and regulations) on the retention of cost savings from EC&EE/LC initiatives of government institutions/agencies (housed in government-owned buildings), are among the designed activities of the project. The strict enforcement of approved enhanced policies and rules and regulations on the energy conserving, energy efficient and low carbon operation and maintenance of public buildings is the expected outcome. Please refer to the After PPG Exercise responses to the STAP comments.

## **Responses to Council Members Comments (France & Germany)**

*(Includes responses before and after the PPG Exercise)*

### **France (9 October 2015)**

**Opinion:** *Favorable, provided that the above mentioned issues are addressed in the final project document.*

Comment	Response
<i>The role of the private sector investing in the Chinese public buildings is not defined.</i>	The project will facilitate the active involvement of the private sector in the public sector in China, starting in public buildings. There a number of services that the private sector has already started to provide in the area of energy conservation and energy efficiency (EC&EE) technology applications, as well as for purposes of utilizing renewable energy technology (RET), in public sector buildings. Currently, the services of private engineering firms are being engaged by some public sector

<p><i>What is the market, how will private investors be attracted and involved?</i></p>	<p>buildings that are keen in doing EC&amp;EE and RET application projects. The project implementing partner, NGOA has in the past 5 years, contracted private engineering and consulting firms to carry out energy auditing and energy management services in some of the major public buildings in the major Chinese cities. The ESCO scheme is something that the public sector buildings are keen to carry out. There is also the possibility of engaging the services of the private sector to carry out outsourced energy services for the public buildings, including the implementation build-operate-transfer or build-operate-own projects, or variations of these. So definitely, the private sector has a very important role to play in improving the energy utilization performance of public buildings in China. The potential is also not remote for increased involvement of the private sector in the energy conserving/energy efficient design, construction, operation and maintenance of public buildings and building services, apart from financing public building development and construction projects.</p> <p><u>Actual PSBEE Project Design:</u> The various roles of the private sector as explained before during the PIF development stage are the among the bases of the design of the project activities, particularly the demos and pilots.</p> <p>The market for EC&amp;EE and RE technology applications in the buildings sector in China is by and large influenced by the growth of building construction. The scale of new building construction in China in recent years (around 2 billion m<sup>2</sup> added each year), propelled by rapid economic development and accompanied by a rush towards urbanization, have resulted in increased energy consumption in the country's buildings sector. Energy demand is expected to rise in China, where it is driven primarily by population, economic development and urbanization. The construction boom has driven energy demand, but economic development and other factors are contributing to the increasing building energy needs<sup>13</sup>.</p> <p>The strategy to be employed under the proposed project to attract and get the private sector involve in EC&amp;EE and RE technology application projects in the public sector buildings is three-fold:</p> <ol style="list-style-type: none"> <li>1) Establishment of an Energy Management Information System (EMIS) to enable on-line monitoring of energy consumption in public buildings and aggregation of data at various levels (local, sub-regional, national);</li> <li>2) Boosting the demand for EE by setting up mandatory EE targets for the public sector (national, sub-regional, local) in combination with incentives to implement EE measures;</li> </ol>
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<sup>13</sup> Based on the NGOA internal statistical report on the energy consumption in the public sector in China, the public buildings in the country accounted for about 5.4% of China's total GHG emissions in 2012. Based on energy consumption data in 2010 from the NGOA and the IEA (CO<sub>2</sub> Emissions from Fuel Combustion), the GHG emissions from the public buildings accounted for 20% of the total national commercial & residential sector GHG emissions. Since many of the residential buildings are government-owned, it can be said that the energy consumption in public buildings is 20% of the energy consumption of the buildings sector in China.  
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<p><i>Are there any incentives towards them?</i></p> <p><i>Payback period in building sector is usually long.</i></p>	<p>3) Ensuring the supply of EE solutions: promoting EPC contracts between public entities and private sector ESCOs and (if needed) establish financing mechanism (guarantees to commercial banks or soft credits from public sources or a combination - depending on where ESCO financing market is in China and how familiar banks are with EPC contracts) so that ESCOs can get access to capital to finance EE projects in public buildings.</p> <p>Basically, there are 2 models that the government is considering to attract private sector involvement in EE projects in public sector buildings in China: (1) Establishment and operationalization of a scheme for financing of new EC&amp;EE/LC technology (system and product) applications (e.g., subsidy programs by national government allocated to the private sectors who implement the successful energy conservation projects); and, (2) Public Private Partnerships (PPP). In addition, the government is also considering the setting up of a specific fund support for EC&amp;EE projects.</p> <p><u>Actual PSBEE Project Design:</u> The strategy to attract private sector partners and investment is essentially based on 3 core elements: (a) Knowing and understanding of the current energy utilization, which involve laying the foundation for better and more efficient energy management in the public sector through the establishment of a system that generates up to date and accurate information of energy use that can be monitored on-line using modern ICT technology; (b) Creation of the necessary demand for better energy management and increased energy efficiency; and, (c) Stimulation of supply of energy management services and EE measures from the market (i.e., the private sector) by promoting EPC contracting between public entities and private ESCOs (assist the public sector with tendering out the EPC contracts) and establish the required appropriate financial mechanism(s) (guarantees of various sorts, or other credit enhancement measures like concessional lending (from public sources); or some sort of combination) allowing the ESCOs to get access to capital on the right terms to finance EE projects in public buildings.</p> <p>Typically, the payback period for building improvement projects, including building services retrofits, energy efficiency and RE technology application projects is 3-5 years in China.</p> <p><u>Actual PSBEE Project Design:</u> The payback periods of the proposed EC&amp;EE/LC technology application demonstrations range from 1 to 6 years (average 4 years).</p>
<p><i>A financing scheme considered in the project is the Energy Service Company (ESCO) scheme. If this scheme was successful in the USA</i></p>	<p>Based on the energy audits and EC&amp;EE and RE projects that the NGOA have implemented under its energy conservation program (in cooperation with contracted private energy and engineering consulting firms and ESCOs), most of the projects that have to be carried out in existing public sector buildings are on lighting, heating ventilation, air conditioning (HVAC), optimal use of electrical appliances, application of building energy management</p>

*or Canada, it mainly dealt with investments having a short payback period (lighting, electrical appliances, occupancy, VMC, A/C). It is usually not the case for thermal insulation (roofs, walls, windows). In addition, a major barrier to ESCO development is the implementation of reliable MRV systems and the reference scenario. How will this barrier be overcome?*

systems, as well as operation and maintenance of installed energy generation systems particularly in some provincial public buildings. These projects in public buildings are of interest to commercial banks and ESCOs especially if there will be adequate and coherent enabling conditions that will motivate and make them confident in venturing into investing in such projects.

In regards MRV, all of the EC&EE (and RE) technology application demonstrations of the project will be designed to include a suitable monitoring and evaluation (i.e., MRV) system to track the operational performance, evaluate and verify, and facilitate the documentation (reporting) of the energy savings and GHG emission reductions realized. The project also has a component on Energy Performance Monitoring and Evaluation System for Public Sector Buildings, and among the activities under this component are the establishment of an energy (supply and consumption) management information system (EMIS); energy performance evaluation system (EPES); and an energy savings verification system (ESVS) for public sector buildings. These all contribute to addressing the issue of reliable MRV systems and baseline energy performance setting for EC&EE (and RE) projects in public sector buildings.

In line with promoting the application of MRV systems, the project will promote in one of the demonstrations the introduction of ICT solutions and “smart” technologies for building energy management to monitor building energy use, spot immediate and most cost-effective opportunities and effectively monitor performance and improvement. Without a good EMIS it is impossible to move on with any market-based instruments because savings should be objectively monitored in order to be “monetized”. Among the activities under Component 2 of the project is the establishment of EE targets/obligations to boost demand and uptake of EE measures by the public sector. To support this targeting system and to generate private interest and investment in EC&EE projects in public sector buildings, there must be a robust MRV system underpinning it.

Moreover, it should be noted that during the 11<sup>th</sup> Five Year Plan (FYP) and the 12<sup>th</sup> FYP, all EC&EE projects of the private sector that were funded by the national government were all required to conduct MRV. This effectively laid the regulatory and technical foundations for doing MRV for energy projects in the country.

Actual PSBEE Project Design: The development and implementation of the same systems proposed during PIF development are included in the project design. The main systems include the building energy audit system, energy management information system (which also include the EPES), and the energy savings measurement and verification system. The ESCO scheme is one of the strategy applied in the project to encourage private sector involvement, i.e., stimulation of supply of energy management services and EE measures from the



	private sector by promoting EPC contracting between public entities and private ESCOs.
<p><i>An important budget from the GEF is allocated to the TA components (USD 7.3 million), and “only” USD 1.2 million is budgeted for the investment component. It does not seem enough; demonstration projects are essential.</i></p>	<p>The demonstrations of EC&amp;EE (and RE) technology applications will involve those that will be implemented and funded by project partners, and those that will be fully and partly funded by the GEF. Practically, those that will be funded by GEF are mainly for incremental items that will be incorporated in some of the baseline demonstrations, i.e., improvements and/or modifications to the original system design to further enhance and ensure the realization of energy savings, and GHG emission reductions. The proposed GEF incremental cost is based on the incremental improvements and additional EE features that can be included in these baseline building EC&amp;EE (and RE) projects. The leveraging the co-financing from project partners, somehow is also a means of ascertaining the resolve and commitment of the project partners in the demos, as well as determine the specific aspects of potential long-term, sustainable and market-driven financing mechanism for EC&amp;EE projects in public buildings.</p> <p><u>Actual PSBEE Project Design:</u> The budget for Component 3 includes most of the “investment” component of the proposed project. The total budget for this component is still the same as that during PIF development, i.e. about US\$ 3.096 million. However, due to the findings from the identification of the EC&amp;EE/LC demos that will be showcased under project, the GEF budget allocation for the investment part has been adjusted to about US\$ 2.568 million, and that for the technical assistance part has been adjusted to about US\$ 0.528 million.</p>
<p><i>The energy consumption in the public sector building in China is huge. Potential for EC&amp;EE is consequently important and will contribute to fighting climate change. Investments are also important. How will the private sector actually be involved in this sector and why do you think it will be more successful than Local or Federal Governments’ involvement if any?</i></p>	<p>Totally agree on the need for investments for EC&amp;EE initiatives in the public sector buildings in China. Typically, the operational budget for the public sector buildings comes from the national/local government and this is done on a yearly basis. Any savings that are generated, for example from EC&amp;EE efforts, will go back to the government coffers. Such savings cannot be utilized by the building administrator for funding new EC&amp;EE initiatives. Hence, they are generally not motivated, and in fact not required/obligated to carry out EC&amp;EE and low carbon technology/technique implementation because their operations costs are uniformly financed from government budgets.</p> <p>There a number of services that the private sector can provide in the area of EC&amp;EE (and RE) technology applications in public sector buildings. There is also the possibility of engaging the services of the private sector to carry out outsourced energy services for the public buildings, including the implementation build-operate-transfer or build-operate-own projects, or variations of these. EC&amp;EE (and RE) technology application projects in public sector buildings can be done in partnership with the private sector entities that develop and supply such technologies or with private sector entities that manufacture and supply, or import and supply (retail) EE appliance/equipment that can be deployed in</p>



	<p>public sector buildings. The partnership can also be with ESCOs<sup>14</sup> that can finance EE projects in public sector buildings, or other similar private sector entities that can provide outsource services (e.g., onsite power generation) in some public sector buildings in the provinces.</p> <p>Private sector investments on EC&amp;EE (and RE) projects in public sector buildings will be facilitated by the national/local governments, with the creation of the suitable enabling conditions (e.g., policies and implementing rules and regulations). Currently, the national government is promoting the Public Private Partnership (PPP) system starting with infrastructure and construction projects and/or services provision. So far the PPP projects involve the public sector engaging the services of the private sector in the implementation of government funded projects in the provinces. In 2012, the NGOA engaged the services of private engineering companies and ESCOs to carry out energy audits in public buildings in Beijing. This year, the NGOA will adopt and promote the PPP model in designing, engineering, financing and implementation of projects to improve the energy utilization efficiency in public sector buildings.</p> <p><u>Actual PSBEE Project Design:</u> The project design includes activities that will involve the private sector, as envisioned during the PIF development stage. The designed project activities are also based on the current thrust of the government in regards PPP, as explained in response to the comments on private sector involvement in the project that were raised during the PIF development stage. Specific sets of activities (e.g., design of the building energy management systems, design and conduct of the building energy audits, identification and feasibility analyses of EC&amp;EE/LC demonstrations, design and implementation of EC&amp;EE/LC demo replication projects, etc.</p>
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### Germany (10 October 2015)

**Opinion:** *Germany welcomes the coherent project structure of the PIF and appreciates the aim to improve the energy efficiency in public sector buildings. The chosen components are complementing each other and the particular project outputs are well outlined. Germany especially supports the focus on monitoring and evaluation within the project.*

Comment	Response
<i>It is assumed that there will be 15 demonstration buildings for energy efficiency measures. In chapter 1.5 the energy</i>	The regional allocation of the demonstrations is based on 4 different climate zones in China to cover the entire country situation for public buildings. The selection criteria for the specific buildings (type, size, function, etc.) that will be selected in each region will be developed during the project

<sup>14</sup> Overall, China has a well-established and rapidly growing ESCO sector (IFC report on China's ESCO industry): over 2,400 centrally registered companies worth CNY 125 billion. But the industry is still in its early stage of development. Individual company's scale is small and most ESCOs can be categorized as SME or even micro-enterprises. Roughly 20% of ESCOs capital come from debt, the rest is equity/self-financing. The business of Chinese ESCOs covers three areas: industry (82%), buildings (15%), and, transportation (3%). China's public buildings represent less than 1% of the country's current EPCs.

<p><i>savings are outlined as a consequence of these direct emission reductions. However, so far it is not clear which provinces will be chosen as sites for the demonstration buildings (no clear methodology for the regional allocation). This information would be relevant for further assessment on the demonstration projects.</i></p>	<p>design and development stage to be able to come up with the final line-up of EC&amp;EE (and RE) technology application demonstrations that will be covered in Component 3 of the project. Based on the initial discussions with the project proponents, the possible set of selection criteria would include, among others, the magnitude of current and forecast energy consumption, energy saving potentials, GHG emission reduction potentials, techno-economic feasibility of the EC&amp;EE (and RE) technology that will be showcased, potential of replications of the showcased technology application, funding availability, potential for the development of value chain businesses, etc.</p> <p><u>Actual PSBEE Project Design:</u> The design of the Component 3 activities are practically based on the explanation provided to this comment during the PIF development stage. The descriptions of the project demos are presented in Annex L of the PSBEE Project Document.</p>
<p><i>The PIF does not elaborate on the different energy efficiency technologies that are supposed to be implemented in the public sector buildings. Are merely building-specific technologies considered such as thermal insulation and lighting or do the measures also include applications used within the buildings?</i></p>	<p>The planned EC&amp;EE (and RE) technology application demonstrations will be based on the energy surveys that will be carried out in the candidate public sector buildings in the different climatic regions of the country during the project design and development stage. The technologies that will be selected cover those that will bring about thermal and electrical energy savings from the various building energy systems (e.g., lighting, appliances/equipment, HVAC, and vertical transport) and building services (water supply and water treatment, waste and sewage management, electric power generation, telecommunications, refrigeration, etc.). Technologies on the design and construction of new public buildings will also be considered (e.g., application of EE building materials). The selection criteria for the building EC&amp;EE (and RE) technologies that will be showcased in each region will be developed during the project design and development stage. Based on the energy audit findings of NGOA, the possible set of selection criteria would include, among others, the commercial availability of the technology; innovative features of the technology; magnitude of potential energy savings and GHG emission reductions that the technology can generate; techno-economic feasibility of the technology application, potential of replications of the technology application in other public buildings, funding availability, potential for the development of value chain businesses from the technology application, etc.</p> <p><u>Actual PSBEE Project Design:</u> The design of the Component 3 activities are practically based on the explanation provided to this comment during the PIF development stage. The descriptions of the project demos are presented in Annex L of the PSBEE Project Document. The technologies include the application of solar energy systems (power and thermal applications), cogeneration (heating and cooling), building energy management systems, heat pump, EE boiler systems, EE air conditioning systems, EE hot water systems, EE</p>

	electric motor systems, EE lighting systems, EE building envelope systems, and biomass/biogas energy applications.
<i>We would also suggest considering the lifespan of the public sector buildings when choosing the energy efficiency technologies.</i>	<p>Agree. The lifespan of the target demo public buildings will be a critical factor in the selection of the EC&amp;EE (and RE) technologies that will be showcased, particularly in retrofit cases. Part of the technical feasibility criteria will be the current remaining life and structural condition of the candidate demo public building.</p> <p><u>Actual PSBEE Project Design:</u> Most of the selected EC&amp;EE/LC technologies that will be showcased in the project involved systems that have useful lifetimes of 15 to 20 years. Hence, the target demo public buildings are those that are at most 20 years old, and obviously those that are structurally sound.</p>

### Japan (8 October 2015)

**Opinion:** Japan acknowledges the importance of the project and would like to have detailed information of it. We sincerely request the Secretariat to provide us the draft final project for consultation.

### Responses to GEFSec Comments (27 July 2015)

Comment & Response	Reference
<p><b>16. Is the GEF funding and co-financing as indicated in Table B appropriate and adequate to achieve the expected outcomes and outputs?</b></p> <p><b>Comment:</b>  <i>During GEF-5, the average co-financing ratio in EE project portfolio was 1:10. In GEF-6, this ratio becomes 1:15. Please increase the ratio of co-financing for this project.</i></p> <p><b>Response:</b>            If the average co-financing ratio of the GEF's EE project portfolio in GEF-5 was 1:10, the project proponents would appreciate very much the GEFSec's explanation on how the 1:15 ratio came about for GEF-6. While the 1:15 ratio seems to be something ambitious that the GEFSec aspires to achieve, the project proponents would appreciate very much knowing how was this set, and why a developing country like China is being required to target such amount of co-financing for projects that it requests the GEF to support in GEF-6.</p> <p>Based on recent communications with China's national GEF OFF, the project proponents know that MOF has expressed several times to the GEFSec that to attract more co-financing and to maximize the benefits of the GEF projects, China will try its best to achieve higher co-financing for each of its proposed project. While it is the desire to involve the private sector in the promotion and implementation of energy conservation and energy efficiency (EC&amp;EE) initiatives in the public sector buildings, and it is highly desirable to have many private sector investments (commercial banks, ESCOs, etc.) for the proposed GEF project, the project proponent (NGOA) wants to ensure that for this project, such partnerships will indeed materialize.</p> <p>The current magnitude of identified collective co-financing from the GOC and the private sector, which translates to a 1:7 co-financing ratio, is something that the NGOA</p>	<p>PIF: Part I, Sec. B, Footnote 7</p>

Comment & Response	Reference
<p>thinks would be sufficient to realize the envisioned activities as currently described in the project concept (i.e., PIF). Obviously, during the detailed project design (i.e., PPG stage), it is expected that there will be more provincial local government administration office (LGOA) units and suitable and appropriate private sector entities such as the ESCOs that are members of the China Energy Conservation Association (EMCO) that will be identified. With the involvement of these additional potential partners in the project, the project co-financing will substantially increase to more or less within what is being suggested. All things considered, the project proponents wants to know first what these other potential private sector entities like the ECMO member ESCOs can bring to the project before coming up with an initial agreement on the partnership.</p> <p>In the MOF’s opinion, as long as the proponent of a GEF-assisted project has at least achieved the minimum 1:6 co-financing ratio at the project conceptualization stage, that should be acceptable to GEF, perhaps on the premise that the co-financing ratio will be increased further during the project design stage.</p>	
<p><b>17. At CEO Endorsement: Has co-financing been confirmed?</b></p>	
<p><b>Comment:</b>  <i>Not at this time. Please consider increasing co-financing ratio to 1:15 for this project.</i></p> <p><b>Response:</b>  During the project conceptualization stage, the project proponents identified relevant ongoing and planned (and budgeted) baseline EC&amp;EE projects and activities in public sector buildings and negotiated with their owners/implementers. At the same time, since the strategy is to employ public-private sector partnerships in meeting the EC&amp;EE aspirations for public sector buildings, they also discussed with potential private sector entities that have expressed interest in investing skills, time and resources (including financial) in developing, implementing and operationalizing EC&amp;EE projects in this government sector. These were consolidated into an enhanced project (as described in the PIF), which they are requesting the GEF for incremental support. The project concept was also presented to other potential stakeholders such as LGOA units in other provinces, and interested commercial banks and ESCOs (e.g., those that have worked on recent EC projects of the NGOA). In response to this follow-up comment from the GEFSec, several rounds of discussions with MOF and project proponent (NGOA) were held again and in the end adjustments in the co-financing amounts (resulting in an overall co-financing ratio of 1:7) were made in the PIF. The parties agreed by consensus that the total co-financing amount is sufficient for the defined project scope at this stage of the project development.</p> <p>During the project design stage, additional co-financing are expected from other interested provincial LGOA units, as well as from private sector entities such as banks, engineering companies and ESCOs. At that stage, it is expected that the co-financing ratio would increase when additional LGOA units and specific private stakeholder partners have been fully consulted and agreements of participation (and their co-financing contributions to the project) are finalized. That would include potential agreements with suitable member ESCOs of EMCO. Based on experience in GEF project development, at the project design stage, a higher-than-initially-proposed co-financing can be achieved for climate change mitigation projects. Usually, other potential co-financing can be identified at that stage, although some of them can just be considered as leveraged financing. Further increase in the level of co-financing usually happens during the course of project implementation when the expected results (particularly in the enabling conditions, e.g., enforced policies, standards, incentives) become apparent. For this particular project, the creation and implementation of the enabling conditions will not only leverage the participation of more entities in the</p>	

Comment & Response	Reference
<p>project thereby enhancing the co-financing, but also influence the realization of more investments in EC&amp;EE projects in public sector buildings.</p> <p>In this regard, while it is desirable to have a wider scope for the project in terms of the coverage and magnitude of activities, which would translate to more non-GEF financing, the project proponents would like to take the GEFSec's suggestion cautiously. Short of clearly understanding the rationale for a 1:15 co-financing ratio for this project, and also not being able to discuss face-to-face with ECMO, for this project concept the project proponents can only confidently confirm co-financing that they are at present sure to materialize rather than commit on a co-financing level that for now is rather ambitious for a developing country like China. Nevertheless, together with UNDP, they understand the GEF's ambition for the overall GEF portfolio to reach a co-financing of at least 1:6, and will do their outmost best to achieve a much higher ratio during the project design stage, and eventually during the project implementation stage. They request for the GEFSec's indulgence of their concern about indiscriminately committing to a higher co-financing ratio at this stage (i.e., PIF) of project development and later on default on such commitment because of the absence of agreements with other potential partners who were not consulted (or were not even heard of) during the PIF development work.</p>	
<b>24. Is PIF clearance/approval being recommended?</b>	
<p><b>Comment:</b> <i>Not at this time. The Agency needs to raise co-financing ratio for this project up to 1:15. Please see and address comments in Boxes 16 &amp; 17.</i></p> <p><b>Response:</b> The project proponents believe that they have adequately addressed the issue of GEF project co-financing to which the MoF has already expressed several times its opinion to the GEFSec. Following their initial estimate of available co-financing (<math>\approx 1:7</math>) for this proposed project, and under the advice of the MOF, the project proponents seeks the GEFSec's understanding about the adequacy of the present co-financing ratio for the proposed project concept. This ratio is expected to further improve, i.e., increased co-financing, during the project design stage, when clear agreements with other LGOA units and private sector entities (e.g., EMCO member ESCOs) would be negotiated and confirmed. In this regard, the project proponents expect the GEF CEO Approval of this PIF soon.</p>	

### Responses to Informal Comments from GEFSec (9 June 2015 & 1 July 2015)

#### 9 June 2015

Comments	Responses	Reference
<p>Energy use in China's public buildings continues to rise--China's large-scale public buildings account for less than 4% of the national urban building area, but accounted for more than 20% of the total national building</p>	<p>Based on the NGOA internal statistical report on the energy consumption in the public sector in China, the public buildings in the country accounted for about 5.4% of China's total GHG emissions in 2012.</p> <p>Based on energy consumption data in 2010 from the NGOA and the IEA (CO2 Emissions from Fuel Combustion), the GHG emissions from the public buildings accounted for 20 % of the total national commercial &amp; residential sector GHG</p>	<p>PIF: Footnote 12</p>

<p>energy consumption. <b>Please confirm what share of China’s total GHG emissions come from public buildings.</b></p>	<p>emissions. Since many of the residential buildings are government-owned, it can be said that the energy consumption in public buildings is 20% of the energy consumption of the buildings sector in China.</p>	
<p>Improving energy efficiency in public buildings is one of the top priorities for China’s emissions reduction by 2030. <b>Please confirm government policies and statements that confirm this is a top priority.</b></p>	<p>The main policy is guided by the Law of the People’s Republic of China on Energy Conservation, and the associated implementation is defined in the Regulations on Energy Conservation in the Public Sector. Specific plans to implement the policy are presented in the 12th Five-Year Plan of Energy Conservation of the Public sector, and in the GOC’s Integrated Work Program on Energy Conservation and Emission Reduction during the “12th Five-Year Plan</p> <p>Other supporting directives include the Circular on Strengthening the Resources Saving of Government Bodies in 2006, and that on "energy-saving special medium and long-term planning", for the period 2004-2020.</p>	<p>PIF: Part II, Sec. 1.2, Para 1, p. 7</p>
<p>Innovative features of this project include: (1) introduction and facilitation of market-oriented financing schemes for EE initiatives in public buildings; (2) establishment and operationalization of an energy monitoring and reporting system for public buildings; and (3) formulation of improved building energy performance standards. <b>Please describe what is innovative. What is meant by “market-oriented”? Why are new standards needed? Why not just adopt international standards?</b></p>	<p>Innovative elements of the project are the introduction of ICT solutions and “smart” technologies for building energy management to monitor building energy use, spot immediate and most cost-effective opportunities and effectively monitor performance and improvement. Without a good EMIS it is impossible to move on with any market-based instruments because savings should be objectively monitored in order to be “monetized”.</p> <p>Establishing EE targets/obligations (in particular in the public sector) is another example of innovative practice to boost demand and uptake of EE measures by the public sector. If there are no targets/obligations, there is no market solution, because the public sector tends to be very inert (in most, if not all countries). But, the target system will only work and generate private interest and investment if there is a robust MRV system underpinning it, hence the need for a world class EMIS.</p> <p>EPC contracting has proven to be effective to bring the private sector on board. But it is still new in China, and is still very rarely applied in the public sector (even in developed countries) because of the many barriers and inertia typically in place.</p> <p>“Market-oriented” – In the context of the project, this refers to financing schemes implemented by commercial banks and applied for EC&amp;EE initiatives in public sector buildings instead of government run and controlled funding schemes.</p> <p>New standards are required for the energy performance of public sector buildings and building services. These will be established based on the results of energy audits that will be</p>	<p>PIF: Part II, Sec. 1.6 Paras 1-3; pp. 13-14</p> <p>PIF: Footnote 13</p> <p>PIF: Footnote 18</p>

	<p>periodically conducted in public sector buildings and from the energy monitoring and reporting system for public sector buildings. Such standards will be in accord with specific operational characteristics in public buildings and building services.</p> <p>Existing standards from other countries will be used as reference for the development of the building energy performance standards (and labeling) in the public sector. Where possible, international standards can be used as model for the development of the standards that can be adapted as long as these are in accord with the current EE situation and circumstances of the public sector in China. The most appropriate scheme (or combination of schemes) that can be adapted to the current EE situation and circumstances of the public sector in China will be used.</p>	
<p>Engagement with the private sector has strong potential in this project and should be expanded. During project design, the GEF recommends the Chinese government and the UNDP to identify ways to partner with the IFC and support financial approaches to incentivizing investments of local banks and energy service companies in the public building sector.</p> <p><b>This is a potential show-stopper. Unless we see much higher co-financing and a strategic/innovative way to engage private sector, we may pass.</b></p>	<p>The following proposed strategy to attract private sector partners and investment is essentially based on 3 core elements:</p> <p>(1) Know and understand your current use! Lay the foundation for better and more efficient energy management in the public sector: establish a system that generates up to date and accurate information of energy use that can be monitored on-line using modern ICT technology.</p> <p>(2) Then create the necessary demand for better energy management and increased energy efficiency. This can be done e.g. by introducing mandatory EE targets for the public sector (at the different levels) and mandating public procurement standards incorporating EE, combined with the right incentives (budget process reform, by allowing the public entities to retain all or part of their energy savings).</p> <p>(3) Once there is demand for energy management services and EE measures, the supply of such services (from the market, the private sector) is stimulated by promoting EPC contracting between public entities and private ESCOs (assist the public sector with tendering out the EPC contracts) and establish the required appropriate financial mechanism(s) (guarantees of various sorts, or other credit enhancement measures like concessional lending (from public sources); or some sort of combination) allowing the ESCOs to get access to capital on the right terms to finance EE projects in public buildings.</p> <p>Overall, China has a well-established and rapidly growing ESCO sector (see e.g. this recent <a href="#">review by IFC</a> of the sector): over 2,400 centrally registered companies worth CNY 125 billion. But the industry is still in its early stage of development. Individual company's scale is small and most ESCOs can be categorized as SME or even micro enterprises.</p>	<p>PIF: Footnote 23</p> <p>PIF: Footnote 16</p>



	<p>Roughly 20% of ESCOs capital come from debt, the rest is equity/self-financing. The business of Chinese ESCOs covers three areas: industry (82%), buildings (15%), and, transportation (3%). <b>China's public buildings represent less than 1% of the country's current EPCs.</b> The main barriers for ESCO's entering public building segment are on the demand side: there are no rules and best practices identified to support the use of EPCs in public procurement and moreover, energy budgets are decreased when energy efficiency is achieved (since budgets are determined by the previous years' actual expenses). This reduces the interest of both ESCOs and public managers in pursuing EPC since the payment allowance reduces public institutions' ability to pay for the services. The project has a potential and ambitions to leverage significant amount of private sector co-financing from Chinese ESCOs by removing the underlying, demand-side barriers, to their investment in public building sector. With regards to involving IFC (or another appropriate financial institution), the NGOA thinks that they would like to work with IFC in the development and implementation of appropriate financing schemes for the private sector on EE improvement in public sector buildings. If local commercial banks will be involved in the financing of EE projects in public buildings, perhaps the IFC would be interested in supporting these commercial banks with lines of credit or help capitalize guarantee schemes. The latter would be promising in terms of their leveraging capacity, aiming to significantly increase the co-financing of the project by unlocking private capital</p>	<p>PIF: Part II, Sec. 1.1, Item 4, Para 2, p. 7</p> <p>PIF: Footnote 28</p>
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**1 July 2015**

Comments	Responses	Reference
<p>1) What business model will be used to attract private sector partners and investment?</p>	<p>The Business model to be used to attract private sector partners and investment will be based on 3 elements:</p> <ul style="list-style-type: none"> <li>a) Establishment of an Energy Management Information System (EMIS) to enable on-line monitoring of energy consumption in public buildings and aggregation of data at various levels (local, sub-regional, national)</li> <li>b) Boost demand for EE: by setting up mandatory EE targets for the public sector (national, sub-regional, local) in combination with incentives to implement EE measures (e.g. by allowing building managers/local authorities to retain a certain portion of savings in their budget)</li> <li>c) Ensure supply of EE solutions: promoting EPC contracts between public entities and private sector ESCOs (help prepare and organize tenders for EE measures in public buildings based on EPC) and (if needed) establish financing mechanism (guarantees to commercial banks or soft credits from public sources or a combination - depending on where ESCO financing market is in China and how</li> </ul>	<p>PIF: Footnote 22</p>



	familiar banks are with EPC contracts) so that ESCOs can get access to capital to finance EE projects in public buildings	
2) What is the global "state of the art" for efficiency in public buildings and how can it be applied in this project?	<p>- The emerging global "state of the art" in the building sector, including public buildings, is the proliferation of ICT solutions and "smart" technologies for building energy management to monitor building energy use, spot immediate and most cost-effective opportunities and effectively monitor energy performance/improvement. Without good EMIS it is impossible to move on with any market-based instruments because savings should be objectively monitored in order to be "monetized". UNDP has an excellent track record with EMIS by piloting the system, which received nation-wide replication in Croatia and is now being rolled out in other countries. The <u>Croatian EMIS</u> has been listed as international best practice for ICT solutions in buildings: Here is the link to <a href="http://www.unece.org/fileadmin/DAM/energy/se/pdfs/geee/pub/EE_Best_Practices_in_EE_publication.pdf">http://www.unece.org/fileadmin/DAM/energy/se/pdfs/geee/pub/EE_Best_Practices_in_EE_publication.pdf</a> ;</p> <ul style="list-style-type: none"> <li>• Establishing EE targets/obligations is another example of international best practices to boost demand and uptake of EE measures by the public sector. If there are no targets/obligations, there is no market solution, because the public sector tends to be very inert (in most, if not all countries). But, the target system will only work and generate private interest and investment if there is a robust MRV system underpinning it - hence the importance of EMIS as a first steps toward market-based EE solutions in the public sector.</li> <li>• Finally, EPC contracting is also the best practice internationally in terms of getting the private sector on board. It is still very rarely applied in the public sector (even in developed countries) because of the many barriers and inertia typically in place. Hence the importance of introducing EMIS and targets/obligations as a necessary first step.</li> </ul> <p>Furthermore, these are fully consistent with recommendations from Berkeley Lab/Pacific North West Lab on promoting EPCs in China (just released in April 2015) <a href="http://www.globalchange.umd.edu/data/epc/EPC_Market_Opportunity_Paper_final0429.pdf">http://www.globalchange.umd.edu/data/epc/EPC_Market_Opportunity_Paper_final0429.pdf</a> ). This report identified also key barriers to EPCs in China (Table 6, p. 12) which the project will explicitly address:</p> <ol style="list-style-type: none"> <li>1) Lack of public sector involvement as an active EPC customer</li> <li>2) Lack of comprehensive M&amp;V protocol and technical and institutional capacity in M&amp;V</li> <li>3) Lack of access to external financing and shortage of diversified sources of financing; and,</li> <li>4) Lack of clients' creditworthiness</li> </ol>	<p>PIF: Part II, Sec. 1.6 Paras 2-3; pp. 13-14</p> <p>PIF: Footnote 15</p>
(3) What are the plans for engaging	- EMIS should cover all levels of government, see presentation here which shows how it is done in Croatia:	PIF: Part II, Sec. 1.3;

<p>with all levels of government - explain the roles of district, local, provincial, and national government?</p>	<p><a href="http://iet.jrc.ec.europa.eu/energyefficiency/sites/energyefficiency/files/files/documents/events/ems_and_emis_in_public_sector_bg.pdf">http://iet.jrc.ec.europa.eu/energyefficiency/sites/energyefficiency/files/files/documents/events/ems_and_emis_in_public_sector_bg.pdf</a></p> <p>- Similarly, there should also be a hierarchy of targets from national to local with a clear system for their enforcement</p> <p>The following is the summary of the planned engagement of the key actors in the project development and implementation at different levels of government.</p> <table border="1" data-bbox="475 584 1294 2016"> <thead> <tr> <th data-bbox="475 584 660 651">Level of Government</th> <th data-bbox="660 584 1294 651">Role in Project Development &amp; Implementation</th> </tr> </thead> <tbody> <tr> <td data-bbox="475 651 660 1106">Central</td> <td data-bbox="660 651 1294 1106">The NGOA represents the GOC in this project as UNDP implementing partner (development and implementation). It will coordinate and liaise with all other pertinent GOC agencies that will be involved in all aspects of the barrier removal activities of the project such as in policy formulation and enforcement. NGOA will also be responsible in facilitating and coordinating the design and implementation of the demo EE technology applications in selected public buildings under its management. It will also be responsible in the regular monitoring of the progress of the project activities (in terms of delivery of outputs and utilization of budget funds) since it is the overall manager for the project implementation.</td> </tr> <tr> <td data-bbox="475 1106 660 1630">Provincial</td> <td data-bbox="660 1106 1294 1630">The Local Government Office Administration (LGOA) in each province is responsible for coordinating and co-funding the design and implementation of the demo EE technology applications in selected public buildings under its management. 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<p>4) What elements of the project would be worthy of highlighting at Paris to showcase truly innovative approaches for building sector?</p>	<p>We would highlight the whole package because only taken together these measures can ensure market transformation; because of the scale that can be achieved in a country as China, this would make for a very substantive initiative. It could also serve as a potential ground breaking leading example of how to bring emissions down in the public building sector that can be copied and followed in many countries around the world. Although the public sector in China is probably larger than in most countries, it is an important segment of the market in most countries and a very significant energy user (and GHG emitter). It is one thing to demonstrate the effectiveness of the promoted approach in a small country like Croatia; it can become a game changer if a country like China would put its weight behind it. It could potentially trigger many countries to follow suit. The government introduces the rules of the game and the required regulations, but would subsequently create the conditions to spin off as much as possible of the actual energy management in its buildings to the private sector. Finally, the public sector can have a leading role in creating the required national awareness about the importance of better energy management and can lead by example, encouraging great adoption in the wider economy and in the commercial and residential sectors.</p>	
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#### Responses to GEFSec Comments (12 August 2014)

Comment & Response	Reference
<p><b>4. Is the project aligned with the focal area/multifocal areas/LDCF/SCCF/NPIF results framework and strategic objectives?</b></p>	
<p><b>Comment:</b>  <i>Please articulate more clearly the linkages between the project components and GEF-6 climate change mitigation strategic objectives and programs that are stated on pages 49 -70 of GEF-6 PROGRAMMING DIRECTIONS at <a href="http://www.thegef.org/gef/GEF6-Programming-Directions">http://www.thegef.org/gef/GEF6-Programming-Directions</a></i></p> <p><b>Response:</b>  The facilitation of the energy conserving and energy efficient operation of buildings and building services in the public sector in China, which is the objective of this proposed project is in line with the GEF-6's Climate Change Mitigation (CCM) Strategic Objective 1, which aims to promote innovation, technology transfer, and supportive policies and strategies. The proposed project is comprised of interventions that promote timely development, demonstration and financing of low carbon technologies and mitigation options (CC1-Prog 1) as applied in public sector buildings in China; as well as interventions that involve the development and demonstration of innovative policy packages and market initiatives to foster new range of mitigation actions (CC1-Prog2). Under this proposed project, specific interventions that will bring about reduction of CO2 emissions from the operation of energy consuming equipment/appliances and service facilities in public sector buildings will be carried out. Involving the private sector, particularly banks/financial institutions, as well as entities that are willing to finance EC&amp;EE (and low carbon) technology applications through ESCO and PPP modalities, will form part of the strategy for the proposed project. Supportive policies, strategies, regulations and financial or organizational mechanisms that accelerate the</p>	<p>PIF: Footnote 4, p. 1</p>

Comment & Response	Reference
<p>EC&amp;EE applications will be developed, and will target the removal of barriers by creating enabling environments.</p> <p>During the PPG stage, the market-based financing mechanisms that will be developed can consider something that is also performance-based (i.e., based on energy savings) picking up from the experience and lessons learned so far from the operation of existing carbon trading exchanges in the country to develop “energy savings trading schemes”. The NGOA is interested in supporting energy performance-based financing for the LGOAs to finance verified energy savings emission reductions, based on an agreed upon baseline energy performance. Such performance-based scheme will be supported by the various systems that will be developed for tracking the public sector buildings energy performance namely: (a) energy monitoring and reporting system; (b) energy auditing system; and, (c) energy savings verification system.</p>	<p>PIF: Footnote 16, p. 10</p>
<p><b>6. Is (are) the baseline project(s), including problem(s) that the baseline project(s) seek/s to address, sufficiently described and based on sound data and assumptions?</b></p>	
<p><b>Comment:</b> <i>Please identify barriers in China that have been preventing ESCOs from successful business in government buildings. This project may focus on unlocking these barriers.</i></p> <p><b>Response:</b> The barriers that prevent ESCOs from engaging in public sector EC&amp;EE projects such as those in national and local government buildings and facilities are mainly linked to the 4 main barriers that are presented in the PIF. The non-involvement of the ESCOs (and private sector financing institutions) in public sector EC&amp;EE activities are by and large effects of 3 of the 4 main barriers, and contributes to the barrier of limited market-oriented financing mechanism for funding EC&amp;EE technologies/products in the public sector. The ESCO industry just like any other profit-oriented industry would definitely be interested in investing resources (expertise, time and money) in profitable EC&amp;EE projects. The lax and rather weak implementation of policies on EC&amp;EE in the national and local government agencies and facilities mainly prevent private sector ESCOs interest and investment in the public sector EC&amp;EE projects. EC&amp;EE projects in the public sector are often not sufficiently funded, and do not get enough and optimum funding from social funds.</p> <p>The administrators and managers of public sector buildings in the country are generally not motivated, and in fact not required/obligated to carry out EC&amp;EE and low carbon technology/technique implementation because their operations costs are uniformly financed from government budgets. Allocating budgets for such endeavors, let alone engaging ESCOs to do, or assist them doing, such efforts, would most likely not be their priority. The generally low level of awareness of public sector personnel (e.g., government authorities, policy and decision-makers, public sector administrators, buildings and facilities managers, etc.) about the various EC&amp;EE and low carbon options and opportunities that can be applicable in public buildings and facilities, and their socio-economic and environmental benefits, prevents them from engaging the services of ESCOs in developing and implementing such initiatives, let alone doing such efforts themselves.</p> <p>Considering the fact that ESCO involvement in public sector buildings EC&amp;EE initiatives is critical to the realization of the objective of the proposed GEF project, the removal of the barriers to this will definitely be addressed in the project.</p>	<p>PIF: Part II, Sec. 1.1</p> <p>Footnote 11, p. 6</p>
<p><b>7. Are the components, outcomes and outputs in the project framework (Table B) clear, sound and appropriately detailed? The GEF Secretariat recommends the Agency to consider the following elements in the Project Components and Project Outcomes in Table B:</b></p>	

Comment & Response	Reference
<p><b>Comment:</b>  <i>1. For Component "Public Sector EC&amp;EE Policy and Regulatory Frameworks", please consider developing energy efficiency standards/codes and a labeling program for government buildings. One example is the Energy Star Building Program of the US EPA. This Component should have a target, such as "By 2020, all or 70% of Chinese government buildings should become Certified Energy Efficient Buildings".</i></p> <p><b>Response:</b>  Among the envisioned outputs in this Component is a developed (for approval) set of improved and updated public sector building energy standards. This is in fact considered as one of the innovative features of the project - Formulation of improved building energy performance standards based on the results of the proposed energy audit program and the proposed systems on energy monitoring and reporting; and energy performance evaluation for public sector buildings. The suggested example of program from the US EPA will be used as reference for the design of the building energy performance standards (and labeling) program, or where possible be used as model for a similar appropriate program that is adapted to the current EE situation and circumstances of the public sector in China. The NGOA can refer to other schemes that can be used aside from the USEPA Energy Star to be used as reference model for the planned public sector building energy standards. Other schemes that China can consider include: LEED (US), Green Globes (US), Living Building Challenge (US), Beam (Hong Kong), BREEAM (UK, EU), CASBEE (Japan), Green Mark Scheme (Singapore), Green Star SA (South Africa), Pearl Rating (UAE), etc. The most appropriate scheme (or combination of schemes) that can be adapted to the current EE situation and circumstances of the public sector in China will be used. The appropriate SMART indicator, similar to what is suggested, will be developed and presented in the finalized project planning matrix (log frame) in the Project Document that will be submitted for CEO endorsement.</p>	<p>PIF: Part II, Sec. 1.3, Component 1</p> <p>Footnote 13, p.8</p>
<p><b>Comment:</b>  <i>2. For Component "Energy Performance Monitoring and Evaluation System for Public Sector Buildings", the outcomes or outputs should include a market based mechanism to encourage the private sector (ESCOs) to perform refurbishing government buildings for energy efficiency improvement. In addition, ESCOs with special government permit can perform energy efficiency auditing, bench-marking, monitoring, reporting, certifying, and issuing labels for certified energy efficient building.</i></p> <p><b>Response:</b>  The project proponents intend to carry out activities on this under Component 3 (EC&amp;EE Improvement Promotion and Demo Programs for Public Sector Buildings). Among the planned outputs under Component 3 are: (a) Completed assessment of market-based financing scheme options and design of appropriate market-based financing of new EC&amp;EE/LC technology (system and product) applications; and, (b) Established and operational scheme for market-based financing of new EC&amp;EE/LC technology (system and product) applications. These are in line with the intended innovation of the project wherein market-oriented financing schemes for EC&amp;EE initiatives in public sector buildings will be introduced and facilitated. This include, among others, the use of ESCOs. This will facilitate the involvement of the private sector in the energy efficiency improvement efforts in public sector buildings, and effectively mobilize market-based finance for supporting public sector EC&amp;EE initiatives through, among others, the local ESCO industry.</p> <p>As in previous GEF-funded energy (EE and RE) and climate change mitigation projects in China, local engineering and consulting firms and ESCOs, will be utilized in the</p>	<p>PIF: Part II, Sec. 1.3, Component 3</p> <p>PIF: Footnote 14, p. 10</p>

Comment & Response	Reference
<p>implementation of the planned activities of the project, which include interventions that will enable to design and development of the various proposed EE and energy management systems (which are also those suggested by the reviewer), as well as in the implementation of such systems.</p>	
<p><b>Comment:</b>  3. For Component "EC&amp;EE Improvement Promotion and Demo Programs for Public Sector Buildings", please indicate the number of demo buildings. It is suggested that the project should select at least four buildings for demo from the national government, a provincial government, a county government and a small township government.</p> <p><b>Response:</b>  There will be a total of 15 demonstration buildings: The breakdown of demo buildings is as follows:  <b>A. EC&amp;EE (and RE) technology application demonstrations in public sector buildings (for 2 sub-sectors): 10 demos</b></p> <ul style="list-style-type: none"> <li>• 4 national government building (NGOA-administered) <ul style="list-style-type: none"> <li>▪ 2 office buildings, 2 hospital buildings</li> </ul> </li> <li>• 6 local government buildings (LGOA-administered) <ul style="list-style-type: none"> <li>▪ 1 provincial government office building, 1 provincial hospital building</li> <li>▪ 1 county government office building, 1 county hospital building</li> <li>▪ 1 town government building, 1 town hospital building</li> </ul> </li> </ul> <p><b>B. EC&amp;EE/LC demonstration projects financed through market-based financing scheme in public buildings in selected public sub-sectors in 3 to 5 cities or regions: 5 demos</b></p> <ul style="list-style-type: none"> <li>• 2 national government building (NGOA-administered) <ul style="list-style-type: none"> <li>▪ 1 office building, 1 hospital building</li> </ul> </li> <li>• 3 local government buildings (LGOA-administered) <ul style="list-style-type: none"> <li>▪ 1 provincial government office building</li> <li>▪ 1 county hospital building</li> <li>▪ 1 town government building</li> </ul> </li> </ul>	<p>PIF: Part II, Sec. 1.3, Component 3</p>
<p><b>Comment:</b>  Finally, the agency needs to increase the budget for the sub-component of "INV".</p> <p><b>Response:</b>  The estimated GEF incremental funding for the demonstrations has been revised upwards to US\$ 1.2 million. This was after the NGOA has recently obtained updated information regarding the identified baseline building EC&amp;EE (and RE) projects/activities that will be used as demonstrations under the proposed GEF project. The proposed GEF incremental cost is based on the incremental improvements and additional EE features that can be included in these baseline building EC&amp;EE (and RE) projects.</p>	<p>PIF: Part I, Sec. B, Components 1, 2, 4 &amp; 5</p>
<p><b>8. (a) Are global environmental/adaptation benefits identified? (b) Is the description of the incremental/additional reasoning sound and appropriate?</b></p>	
<p><b>Comment:</b>  Barriers that prevent the private sector (ESCOs) from refurbishing government buildings have not been addressed. The project design may also need significant revision. Please see comments in Box 7.</p> <p><b>Response:</b>  As explained previously in the response to Comment #6 (not #7), the barriers that prevent ESCOs from engaging in public sector EC&amp;EE projects such as those in national and local government buildings and facilities are mainly linked to the 4 main</p>	<p>Refer to explanations</p>

Comment & Response	Reference
<p>barriers that are presented in the PIF. The non-involvement of the ESCOs (and private sector financing institutions) in public sector EC&amp;EE activities are by and large effects of 3 of the 4 main barriers, and contributes to the barrier of limited market-oriented financing mechanism for funding EC&amp;EE technologies/products in the public sector. These are highlighted in the revised texts in Part II, Sec. 1.1 of the PIF.</p>	<p>to Comment #7 above.</p>
<p><b>10. Is the role of public participation, including ESCOs, and indigenous peoples where relevant, identified and explicit means for their engagement explained?</b></p>	
<p><b>Comment:</b>  <i>The role of private investments in energy efficiency for government buildings has not been identified. Please address market roles and responsibilities of (1) local commercial banks, and (2) ESCOs.</i></p> <p><b>Response:</b>  The NGOA recognizes the importance of the involvement of the private sector, particularly banks/financial institutions, as well as entities that are willing to finance EC&amp;EE (and low carbon) technology applications through ESCO and PPP modalities. Hence, private sector involvement shall form part of the strategy for the proposed project. Realizing the fact that finances are limited in the public sector, the project proponents have already become aware of the importance of private sector investment as well as other private sector-led market-based financing for supporting public sector EC&amp;EE initiatives.</p> <p>Preliminary discussions with commercial banks and ESCOs indicate that these 2 stakeholder groups are interested in working on EC&amp;EE projects in public buildings if there will be adequate enabling conditions that will motivate and make them confident in venturing into investing in such projects. The creation of such enabling conditions by addressing barriers and making good use of the opportunities for private sector involvement shall form part of the activities of the proposed project, and the design of such activities will be carried out during the project preparation phase (i.e., during the PPG exercise).</p>	<p>PIF: Part II, Sec. 1.3, Component 3, Footnote 15, p. 10</p>
<p><b>Comment:</b>  <i>The role of ESCOs is not limited to providing information as indicated in the PIF. It may cover project design, finance, implementation, monitoring, verification of energy savings, post-evaluation, and certification, etc. If ESCOs do not do these jobs, who will do so in the market?</i></p> <p><b>Response:</b>  Just to clarify, the information in Part II, Sec A.2 is on <u>how each identified stakeholder (e.g., ESCOs) will be engaged in project design/preparation</u>. It is not about their role in the project implementation. Hence, ESCOs that will be engaged in the project design are expected to provide the relevant information in the design of the activities on EC&amp;EE project financing, feasibility analyses of demonstrations, as well as in the design of EC&amp;EE training programs. Obviously, since ESCOs are business entities, this would mean that specific ESCOs can be hired to carry out specific project design activities.</p> <p>The project proponents agree that the ESCOs could also be involved in the project implementation to carry out the activities mentioned in the comment. In addition to ESCOs (i.e., ESCOs that design, finance and implement EC&amp;EE projects), the services of local (and foreign) energy engineering firms and energy consulting firms can also be tapped to do the same jobs.</p> <p>There are a number of services that the private sector can provide in the area of EE/RE applications in the public sector buildings. Currently, the services of private engineering</p>	<p>PIF: Part II, Sec. 2 Footnote 19, p. 13</p>



Comment & Response	Reference
<p>firms are being engaged by some public sector buildings that are keen in doing EC&amp;EE. In the past 5 years, the NGOA has contracted private consulting firms to carry out energy auditing and energy management services in some of the major public buildings in the major cities. The ESCO scheme is something that the public sector buildings are keen to carry out but the ESCO-related barriers are hindering the NGOA in doing this. There is also the possibility of engaging the services of the private sector (once the current barriers are removed, and some of the financing schemes will be adopted) to carry out outsourced energy services for the public buildings, including the implementation build-operate-transfer or build-operate-own projects, or variations of these.</p>	<p>PIF: Part II, Sec. 1.1, p. 6</p>
<p><b>11. Does the project take into account potential major risks, including the consequences of climate change, and describes sufficient risk mitigation measures? (e.g., measures to enhance climate resilience)</b></p>	
<p><b>Comment:</b>  <i>The PIF does not address the sustainability and scaling up of improving energy efficiency in public sector buildings. The Chinese government does not provide a market based mechanism to finance energy efficiency projects for public buildings. The private sector does not have incentives to work for public buildings. The risk of non-sustainability and non-scaling up is very high. Please address these risks.</i></p> <p><b>Response:</b>  Sustainable follow-up plans will be developed as part of the project activities (to be supported by the local governments and LGOAs) for the replication of the demonstrated applicable and feasible EC&amp;EE technologies in the public sector buildings in other provinces. The issue of absence of market based financial mechanism for public sector buildings will be addressed under the project in Component 3 with the implementation of the following activities: (a) Conduct of a comprehensive assessment of market-based financing scheme options and design of appropriate market-based financing of new EC&amp;EE/LC technology (system and product) applications; (b) Identification and selection of 5 EC&amp;EE/LC projects that will be financed through market-based financing scheme in public buildings in selected public sub-sectors in 3 to 5 cities or regions; (c) Conduct of feasibility analyses and design of EC&amp;EE and RE technology application demonstrations; (d) Establishment and operationalization of a scheme for market-based financing of new EC&amp;EE/LC technology (system and product) applications; and, (e) Implementation of five EC&amp;EE/LC projects financed through market-based financing scheme in public buildings in selected public sub-sectors in selected cities/regions.</p> <p>Pending the actual selection of the appropriate financing mechanism during the PPG exercise, the following are the tentative ideas that could be considered:</p> <p><i>(a) “Energy savings trading scheme” – This will be in partnership with one of the existing carbon exchanges to set up the scheme for public buildings (and potentially private commercial buildings. The scheme have to be defined further but will basically be based on meeting specific energy consumption (SEC) levels (which will be defined from the various systems that will be developed under the project).</i></p> <p><i>(b) ESCO support scheme – Funds to be managed by a financial institution will be available for ESCOs to borrow for their use in financing EE/RE projects in public buildings. The typical ESCO arrangements with the client building will apply (performance based), but the lending scheme with the financial institution can be through commercial lending or also performance-based (which is yet to be defined).</i></p> <p><i>(c) Usual commercial banking schemes but specifically designed for public sector buildings (involving subsidies from the NGOA) since these normally are not allowed to</i></p>	<p>PIF: Part II, Sec. 1.3, Components 2 and 3.</p> <p>PIF: Part II, Sec. 1.3, Component 3, p. 10.</p>



Comment & Response	Reference
<p><i>borrow funds from commercial banks. Their operating budget comes from the government.</i></p> <p><i>(d) Outsourcing of services to private sector – a form of public-private partnership, which can include private sector operating power generation facilities that are currently owned and operated by some public sector buildings.</i></p> <p>If any of these (or others that maybe identified during the PPG exercise) is adopted, the support systems that will be developed for the public sector buildings energy performance: (a) energy monitoring and reporting system; (b) energy auditing system) and, (c) energy savings verification system (ESVS) will be used in implementing whatever appropriate scheme is selected.</p> <p>The project proponents are unclear about the comment that risk of non-sustainability and non-scaling-up is very high. To them, the proposed project will be sustainable not only because of the Chinese government’s objective of improving energy conservation in public sector buildings, but also because the expected outputs that will be delivered are meant not only to provide the enabling conditions for cohesive efforts to sustain and guide the energy conserving, energy efficient and low carbon operation of these government-owned and operated buildings and facilities. Hence, the proposed project is an essential instrument for sustaining such effort. Moreover, the project proponents believe that the testing and showcasing of the impacts of effective models and schemes for supporting EC&amp;EE initiatives in public sector buildings in the representative segments of the Chinese public buildings sector can easily be scaled up to cover the other segments of the public buildings sector. These activities provide the possibility for scaling-up the application of these models/schemes in other public sector buildings under the LGOAs in other provinces in China. Considering the commitment of the GOC (NGOA) to improve the energy performance of the public sector, the enforcement of the enabling conditions that the project will facilitate (e.g., financial incentives, policies, etc.), the sheer number of public sector buildings (1,904,900 buildings as of 2012), and increasing demand for energy in these buildings since 2005 (8.2% in 2012), and estimated at 20% in 2020, the potential for scaling up what will be demonstrated and promoted under the project is huge.</p>	<p>Footnote 18, p. 13</p>
<p><b>12. Is the project consistent and properly coordinated with other related initiatives in the country or in the region?</b></p>	
<p><b>Comment:</b></p>	
<p><i>Please address how this project will be linked to the following GEF Energy Efficiency Projects that are under implementation and CEO endorsed in China:</i></p>	
<p><b>Responses:</b></p>	
<p>GEFID3700 China UNDP – Promoting Energy Efficient Room Air Conditioners (PEERAC) Project (Under Implementation) – The PSBEE project development team (PDT) will coordinate with PEERAC implementers on the design of activities that will involve the promotion and application of EE RACs in public buildings.</p>	<p>PIF: Part II, Sec. 5, pp. 15-16</p>
<p>GEFID3743 China World Bank - Provincial Energy Efficiency Scale-Up Program (Under Implementation) - The PSBEE PDT will coordinate with the implementers of this project on the design of demonstration building EC&amp;EE activities in the target provinces by making use of the results of the project related to through technical assistance and institutional capacity building.</p>	
<p>GEFID4109 China World Bank – China Energy Efficiency Promotion in Industry (Under Implementation) - The PSBEE PDT will coordinate with the implementers of this project on the design of demonstration building EC&amp;EE projects that will be financed through market-based financing mechanisms or involve the promotion of commercial bank/financial institution financing of EC&amp;EE in public buildings.</p>	

Comment & Response	Reference
<p>GEFID2951 China World Bank - Energy Efficiency Financing (Under Implementation) - The PSBEE PDT will coordinate with the implementers of this project on the design of demonstration building EC&amp;EE projects that will be financed through market-based financing mechanisms or involve the promotion of commercial bank/financial institution financing of EC&amp;EE in public buildings. The EC&amp;EE techniques/strategies applied in this project, which targets medium and large-sized industrial enterprises, can be used in the design of the PSBEE project.</p>	
<p>GEFID3672 China UNDP - Phasing-out Incandescent Lamps &amp; Energy Saving Lamps Promotion (PIESLAMP) (Under Implementation) - The PSBEE PDT will coordinate with the implementers of the PILESAMP project on the design of building EC&amp;EE projects that will involve the promotion and application of energy saving lamps.</p>	
<p>GEFID4621 China ADB - Hebei Energy Efficiency Improvement and Emission Reduction Project (CEO Endorsed) - The PSBEE PDT will coordinate with the proponents of this project on the design of building EC&amp;EE activities in Hebei Province and possibly in other provinces similar to Hebei by making use of the principles, techniques and strategies that will be applied in improving EE in large industries that are applicable in public sector buildings. This includes coordinating activities on the application of state-of-the-art technologies, market-based incentives, and improved monitoring and verification of energy savings realized.</p>	
<p>GEFID4869 China World Bank - Urban-Scale Building Energy Efficiency and Renewable Energy (IA Approved) - The PSBEE PDT will coordinate with the implementers of this project on the design of demonstration building EC&amp;EE activities financed through market-based financing mechanisms or involve the promotion of commercial bank/financial institution financing of EC&amp;EE in public buildings. The EC&amp;EE techniques and strategies applied in this project in improving policy making and implementation of low-carbon and EE technologies in public and commercial buildings, can be used in the design of the project activities.</p>	
<p><b>13. Comment on the project’s innovative aspects, sustainability, and potential for scaling up.</b></p>	
<p><b>Comment:</b>  <i>Assess whether the project is innovative and if so, how, and if not, why not: Please compare this project against other energy efficiency projects that are under implementation and endorsed in China as listed in Box 12, and find the innovative market niche of this project. The Agency may consider the following as innovation for the project, and any others to be suggested: initiating a green building labeling program for government buildings as the Energy Star labeling done by the USEPA for US government buildings.</i></p> <p><b>Response:</b>  The proposed project is clearly different from those stated in Comment # 12 in the sense that it specifically cover solely the public sector buildings (and building services) in China. That by itself could somehow be considered as innovative in the context of China. The project proponents stand firm about what they believe as the innovative features of the proposed project, which include, among others, the introduction and facilitation of market-oriented financing schemes for EC&amp;EE initiatives in public sector buildings, which could include “energy savings trading schemes”, use of ESCOs, and Public-Private-Partnership modalities; and the formulation of improved building energy performance standards based on the results of associated energy management systems for public sector buildings. As explained in the response to Comment #7, the suggested example of program from the US EPA will be used as reference for the design of the building energy performance standards (and labeling) program, or where possible be used as model for a similar appropriate program that is adapted to the current EE situation and circumstances of the public sector in China. Such program will be designed in the context of public sector buildings in the country.</p>	<p>PIF: Part II, Sec. 1.6., pp. 12-13</p> <p>Refer to response to Comment #7 above</p>

Comment & Response	Reference
<p><b>Comment:</b>  <i>Assess the project’s strategy for sustainability, and the likelihood of achieving this based on GEF and Agency experience: Sustainability is about continued operation of the project when the implementation period is over. Please identify how the new government policy and regulations, institutional mechanisms, and the pilot demonstration models that are to be developed from this project will continually be applied in refurbishing public buildings, and justify how the demo energy efficient buildings will continue running. For example, if a newly installed air conditioning (AC) in a demonstration building is out of order after the GEF project is over, who will be responsible for replacement, where does the budget come from? Who will monitor it? The owner of the building may not be willing to continually use energy efficient A/C since it is usually more expensive. Please address these specific issues for sustainability.</i></p> <p><b>Response:</b>  While the appropriate actions to ensure sustainability of whatever policies, regulations, and institutional frameworks that will be established and enforced/implemented in the public buildings sector in China will be determined during the project preparation phase (i.e., during the PPG exercise), the following indicative actions are recommended.</p> <ul style="list-style-type: none"> <li>• Defining the specific requirements for policy implementation</li> <li>• Defining the specific requirements such as implementing rules and regulations in the enforcement of newly established and enforced policies and systems</li> <li>• Defining specific actions to assist key players/stakeholders in the public buildings sector to comply with the abovementioned requirements</li> <li>• Establishment and implementation of some sort of a committee that will oversee proper policy implementation and compliance to policies and implemented systems</li> <li>• Evaluation of policy and regulatory framework performance and impacts, and coming up with recommended revisions for improved policy and regulatory implementations.</li> </ul> <p>These example, and others yet-to-be defined actions, will be evaluated during the PPG exercise to come up with the appropriate actions to ensure sustainability of the established and implemented policies and systems.</p> <p>In regards the example case mentioned in the comment, it should be noted that the design of demonstrations shall include necessary agreements stipulating roles and responsibilities of all parties involved (e.g., demo host). Such agreement shall cover responsibilities for the operation and maintenance (including replacement) of installed systems or hardware, monitoring and evaluation, incentives, and any other factors/requirements that need to be addressed to ensure that what is being demonstrated or showcased will be done during the entire demo period and if necessary continue beyond that period. Such agreements on the specific delineation of roles/responsibilities shall form part of the demo project design. These, as well as all other requirements for the continuous operation and maintenance of installed demo units will definitely be addressed during the design and implementation phases of the proposed GEF project.</p>	<p>PIF: Part II, Sec. 1.6., p. 12-13</p> <p>Footnote 18, p. 13</p>
<p><b>Comment:</b>  <i>Assess the potential for scaling up the project’s intervention: Without private sector investments, it will be difficult for projects to be scaled up. Please address how the project will incentivize the private sector (local banks and ESCOs) to invest in public buildings.</i></p> <p><b>Response:</b>  With a clear understanding of: (a) what are preventing the private sector involvement in EC&amp;EE project development and implementation in public sector buildings; (b) what would it take for the private sector to invest in EC&amp;EE projects in public sector</p>	<p>PIF: Footnote 19, p. 13</p>

Comment & Response	Reference
<p>buildings; (c) what is the actual level of interest of the private sector in venturing in building EC&amp;EE projects in the public sector; and, (d) what opportunities are available for both the public sector building administrators/managers and the private sector entities (e.g., commercial banks and ESCOs) in jointly developing and implementing building EC&amp;EE and low carbon initiatives, the extent of potentials for scaling up and replicating the activities and results of the project can be clearly defined. With that knowledge, it will also be possible to develop appropriate incentive schemes for private sector investors in venturing in building EC&amp;EE projects in the public sector.</p>	
<p><b>16. Is the GEF funding and co-financing as indicated in Table B appropriate and adequate to achieve the expected outcomes and outputs?</b></p>	
<p><b>Comment:</b>  <i>Components 1 and 2, and the TA subcomponent in Component 3 are budgeted with too much GEF funding. As a result, the total investment for demonstration of energy efficient buildings is \$200,000 or 2% of the total GEF funding for the project. Please consider enlarging the amount of GEF funding for investment.</i></p> <p><b>Response:</b>            Regarding the total GEF funding for the INV sub-component of Component3, as explained in the response to Comment#3, this has already been adjusted upwards to US\$ 1.2 million. In view of that, the GEF contributions for the major barrier removal activities, which involve mainly technical assistance in Components 1 (Policy/Regulatory barriers), Component 2 (Energy Performance M&amp;E barriers); Component 3 (Technical &amp; Financing barriers); and Component 4 (Awareness &amp; Information barriers) have been adjusted accordingly.</p>	<p>PIF: Part I, Sec. B, Components 1, 2, 3 &amp; 4</p>
<p><b>Comment:</b>  <i>The co-financing ratio is 1: 6.7. Please increase the ratio and the level of ambition.</i></p> <p><b>Response:</b>            The proposed co-financing ratio is already in compliance with the minimum ratio mentioned in the recent GEF Co-Financing Policy (FI/PL/01 dd 30 June 2014). It should be noted that this ratio is based on what has been identified and most-likely-be-confirmed co-financing so far by the project proponents. Taking note of the minimum 1:6 co-financing ratio, the actual ratio will be established during the project preparation stage wherein additional co-financing will be identified and confirmed.</p>	
<p><b>Comment:</b>  <i>The fourth Item in Table C shows that \$8,000,000 grant and \$2,000,000 in-kind co-financing will come from 30 provincial governments. Will this project demonstration program involve 30 Chinese provinces? Will the Agency be able to get co-financing letters from 30 provincial governments? Please address these issues.</i></p> <p><b>Response:</b>            Yes. There will be 30 provinces that will be involved in the EMRS and EPES and ESVS activities in Component 2 of the project that are either currently implementing or planning to develop and implement activities on building energy monitoring and reporting, building energy performance evaluation, and energy savings verification. The respective activities on these of these provinces will be subsumed as baseline activities of the proposed GEF project, and their annual budgets for such activities form part of the project co-financing. Since the LGOAs in regions covering these provinces are under the NGOA (which is the project implementing partner), the NGOA guarantees the securing of the required co-financing letters from these provinces. The securing of co-financing letters is among the preparation/design activities of the proposed GEF project, and in that regard would be addressed accordingly.</p>	<p>PIF: Part II, Sec. 1.3.</p>

Comment & Response	Reference
<b>17. At PIF: Is the indicated amount and composition of co-financing as indicated in Table C adequate? Is the amount that the Agency bringing to the project in line with its role?</b>	
<p><b><u>Comment:</u></b>  <i>The Agency only puts \$100,000 for a four year project. This is insufficient as a basis to substantiate UNIDO engagement and presence in China. Please consider increasing this amount.</i></p> <p><b><u>Response:</u></b>            It is assumed that the mention of UNIDO in the comment is a typo error, and actually refers to UNDP. The main contribution of the UNDP in this proposed GEF project is on the project implementation, in addition to the project design during PIF and PPG stages. Based on the specific activities that the UNDP has already done in the PIF preparation and the project management activities that are anticipated to be done for this project, the estimated cash contribution is roundabout US\$ 100,000. This does not include in-kind contributions. The UNDP contribution will be further assessed during the preparation/design stage (i.e., PPG exercise) of this proposed GEF project.</p>	
<b>24. Is PIF clearance/approval being recommended?</b>	
<p><b><u>Comment:</u></b>  <i>Not at this time. Please address comments in Boxes: 4, 6, 7, 8, 10, 11, 12, 13, 16, and 17.</i></p> <p><b><u>Response:</u></b>            The project proponents are confident that all the comments in the GEF review have been adequately addressed as reflected in the proffered explanations and descriptions. In this regard, the proponents are looking forward to the GEF CEO approval of this PIF.</p>	

**ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS<sup>15</sup>**

A. Provide detailed funding amount of the PPG activities financing status in the table below:

PPG Grant Approved at PIF:			
<i>Project Preparation Activities Implemented</i>	<i>GEF/LDCF/SCCF Amount (\$)</i>		
	<i>Budgeted Amount</i>	<i>Amount Spent To date</i>	<i>Amount Committed</i>
Conduct of Studies and Surveys	40,000	40,000	0
Conduct of Logical Framework Analysis (LFA) workshop	35,000	35,000	0
Identification and assessment of demonstrations that will be implemented in the project	30,000	25,000	5,000
Detailed design of the project components and activities	25,000	14,000	11,000
Conduct of stakeholder and project partner coordination meetings	25,000	17,000	8,000
Preparation of the UNDP-GEF Project Document (ProDoc) and GEF CEO Endorsement Request (CER) Document	35,000	14,000	21,000
Finalization of the ProDoc and CER Document	10,000	5,665	4,335
<b>Total</b>	<b>200,000</b>	<b>150,665</b>	<b>49,335</b>

The PPG phase of the PSBEE project development was carried out in accordance with the approved project implementation plan (PIP). Despite several delays that pushed the time line near towards the allowable 18 months project preparation period, the PPG exercise objective was achieved. A project development team that was set-up by the implementing partner, NGOA, carried out the PPG Exercise PIP. Data and information gathered by the team, and supplemented heavily with stock knowledge about building EE projects, and desk top research done by the UNDP-GEF EITT Team were used in the design of the various project activities. Information about the ongoing and planned programs of the NGOA on EC&EE/LC technology applications in NGOA-, and LGOA-administered public buildings, were gathered, processed and analyzed to obtain a clear understanding of the current situation concerning the issues and concerns regarding the energy performance of public buildings in China. Plans and programs of the NGOA and LGOAs on this subject, as well as those from the local buildings industry were also researched and reviewed. The discussions with the key stakeholders and project partners during the PIF development and during the PPG stages have made possible the identification of relevant issues and barriers that need to be addressed and considered in the development and implementation of the PSBEE project. These stakeholders, including EC&EE/LC experts in the country were engaged in intensive discussions for the project development team to fully understand the nature and extent of these issues/barriers. The logical framework analysis (LFA) that was carried out by the team together with the stakeholders was mainly to verify and confirm the project results framework that was developed and presented during the PIF stage of the project development. Practically the LFA confirmed the previously defined project goal and objective, and expected outcomes. Discussions with the NGOA, particularly regarding their technical capacity development needs, and other technological and business concerns became the basis of the demonstrations and the planned specific technical

<sup>15</sup> If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue to undertake the activities up to one year of project start. No later than one year from start of project implementation, Agencies should report this table to the GEF Secretariat on the completion of PPG activities and the amount spent for the activities. Agencies should also report closing of PPG to Trustee in its Quarterly Report.  
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assistance in various aspects of the design and implementation of these demonstrations and potential replications. Consultations with the government institutions on quality standards were also carried out, for the design of the activities on the enhancement of existing building energy codes and standards. The discussions with the stakeholders and project partners also resulted in getting commitments for the co-financing of the baseline activities that were subsumed into the project; the government's contribution to the funding of some of the incremental activities, as well as in the agreed project coordination mechanisms and the project implementation arrangements. The outputs of the PPG exercise were used in the detailed design of the PSBEE project components and activities.

**ANNEX D: CALENDAR OF EXPECTED REFLAWS** (if non-grant instrument is used)

Provide a calendar of expected reflaws to the GEF/LDCF/SCCF Trust Funds or to your Agency (and/or revolving fund that will be set up): N.A.