PROJECT IDENTIFICATION FORM (PIF)
PROJECT TYPE: Medium-sized Project
TYPE OF TRUST FUND:GEF Trust Fund

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PART I: PROJECT INFORMATION

Project Title:	Nationally Appropriate Mitigation Actions in the Construction Sector in Mongolia		
Country(ies):	Mongolia	GEF Project ID:[1]	5830
GEF Agency(ies):	UNDP	GEF Agency Project ID:	5315
Other Executing Partner(s):	Ministry of Construction and Urban Development, Ministry of Environment and Green Development and Ministry of Energy.	Submission Date: Resubmission Date:	29 April 2014 14 May 2014
GEF Focal Area (s):	Climate Change	Project Duration (Months)	40 months
Name of parent program (if applicable): • For SFM/REDD+ ☐ • For SGP ☐		Agency Fee ($):	120,637

A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK[2]:

Focal Area Objectives	Trust Fund	Indicative Grant Amount, ($)	Indicative Co-financing, ($)
CCM-2	GEFTF	853,863	4,039,452
CCM-6	GEFTF	416,000	1,040,000
Total Project Cost		1,269,863	5,079,452

B. INDICATIVE PROJECT FRAMEWORK

Project Objective: To facilitate market transformation for energy efficiency in the construction sector through the development and implementation of NAMA.						
Project Component	**Grant Type[3]**	**Expected Outcomes**	**Expected Outputs**	**Trust Fund**	**Indicative Grant Amount ($)**	**Indicative Co-financing ($)**
1. Establishment of Baseline Energy Consumption and GHG Emissions in the Construction sector	TA	1. Effective policy making informed by robust energy consumption monitoring and reference	1.1 Established and operational energy consumption and GHG inventory system for the construction sector with improved data availability and methodology.	GEFTF	200,000	600,000

[1] Project ID number will be assigned by GEFSEC.
[2] Refer to the reference attached on the Focal Area Results Framework when completing Table A.
[3] TA includes capacity building, and research and development.

		baselines for the construction sector	1.2 Defined and established reference baseline on energy consumption and GHG emissions for the construction sector. 1.3 Designed and completed capacity development programs for decision makers and agencies on the sustainable operation of the GHG inventory system.			
2. Development and Implementation of NAMA in the Construction Sector	TA	2. Prioritized NAMA in the construction sector developed and funded for implementation.	2.1 Developed framework for evaluating appropriate climate change mitigation interventions; identified priority climate change mitigation actions. 2.2 Completed operational structure for coordination among government agencies and key stakeholders for NAMA development and implementation. 2.3 Completed capacity development of private and public sector actors on successful development and implementation of NAMAs; and in the supportive identification of financing options.	GEFTF	300,000	700,000
	INV		2.4 Developed and implemented construction sector NAMA	GEFTF	521,022	3,184,088
3. Measurement, reporting and verification (MRV) system for NAMA		3. Effective climate change mitigation policies and financing strategies adequately guided and informed by NAMA impacts ascertained through the established MRV system.	3.1 Defined key indicators (GHG and non-GHG) to be monitored for the selected mitigation actions 3.2 Developed and implemented accurate MRV system for the construction sector NAMA 3.3 Designed and completed capacity development in the implementation and institutionalization of the MRV system	GEFTF	200,000	400,000
Subtotal					1,221,022	4,884,088
Project Management Cost (PMC)[4]					48,841	195,364
Total Project Cost					1,269,863	5,079,452

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

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount ($)
National Government	Ministry of Construction and Urban Development,	In kind	200,000
National Government	Ministry of Construction and Urban Development	Grant	100,000
National Government	Ministry of Environment and Green Development and Ministry of Energy	In-kind	150,000
National Government	Ministry of Environment and Green Development and Ministry of Energy	Grant	50,000
Private Sector	Financial institutions, private project developers	Bank loans	2,479,452

[4] To be calculated as percent of subtotal.

Private Sector	Financial institutions, private project developers	Investments	2,000,000
GEF Agency	UNDP	In-kind	50,000
GEF Agency	UNDP	Grant	50,000
Total Co-financing			5,079,452

D. INDICATIVE TRUST FUND RESOURCES ($) REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY: N.A.

E. PROJECT PREPARATION GRANT (PPG)[5]

Please check on the appropriate box for PPG as needed for the project according to the GEF Project Grant:

	Amount Requested ($)	Agency Fee for PPG ($)[6]
• No PPG required.	-- 0--	--0--
• (up to) $50k for projects up to & including $1 million		
• (up to) $100k for projects up to & including $3 million	100,000	9500
• (up to) $150k for projects up to & including $6 million		
• (up to) $200k for projects up to & including $10 million		
• (up to) $300k for projects above $10 million		

F. PPG AMOUNT REQUESTED BY AGENCY(IES), FOCAL AREA(S) AND COUNTRY(IES) FOR MFA AND/OR MTF PROJECT ONLY: N/A

PART II: PROJECT JUSTIFICATION[7]

A.1. Project Description

Ever since Mongolia has presented its Nationally Appropriate Mitigation Actions (NAMAs) intent to the UNFCCC, it has explicitly expressed its commitment to pursue the development and implementation of NAMAs. Mongolia's NAMA concepts identify 21 mitigation options in four major GHG emitting sectors including energy, industrial process, agriculture and forestry. Out of these concepts, 4 focus on energy efficiency in the construction sector.

The construction sector[8] in Mongolia is heavily reliant on coal as a primary source of energy, hence, a significant source of corresponding GHG emissions. During the last ten years, historical data on the building stock in the country show a total floor area of approximately 20 million m^2. With rapid urbanization and strong housing demand this figure is projected to increase to almost 40 million m^2 from 2015-2025. For a country that requires eight months of heating in average, fuel combustion and fugitive emissions have become the largest sources of GHG emissions, accounting for more than 50% of gross CO^2 emissions in the business as usual scenario. The Second National Communication (SNC) estimates that the commercial and residential sector makes up 12% of the total GHG emissions from fuel combustion in 2006 by sources. As such, the residential sector accounts for around 16% of total energy use in the country, 11% of

[5] On an exceptional basis, PPG amount may differ upon detailed discussion and justification with the GEFSEC.
[6] PPG fee percentage follows the percentage of the GEF Project Grant amount requested.
[7] Part II should not be longer than 5 pages.
[8] In the Mongolian context, "construction sector" refers to heavyweight, multi-storey commercial and residential apartment buildings (and a few private houses); since these are the only buildings connected to water supply, sewage, district heating and domestic hot water systems. Forty percent of the urban population lives in multi-storey buildings.

commercial energy use (excluding firewood); 3% of direct GHG emissions and 26% of total electricity use. GHG emissions from the residential sector are projected to increase, largely due to the increase of urban population with a rate of 2.81%. Energy consumption in the buildings sector is estimated to increase 1.84 times in 2020 and 2.55 times in 2030 from the base year of 2006. The projections indicate that Mongolia's GHG emissions will rise above 2006 levels by about 2.1 times in 2020 and 3.2 times in 2030. According to Mongolia's 5th MDG report, per capita CO^2 emissions increased to 6.6 tons from 5.3 tons of 1990 baseline, whereas the target is 4.4 tons by 2015. On the other hand, the country sets a target to reduce the heat energy consumption by 30% by 2021.[9] The latest energy sector modelling results estimate potentials to reduce building sector energy use by 35% against 2010 baseline through green energy options, such as enforcing energy efficiency (EE) standards, retrofitting of existing buildings and providing insulation to those living in traditional dwellings.[10]

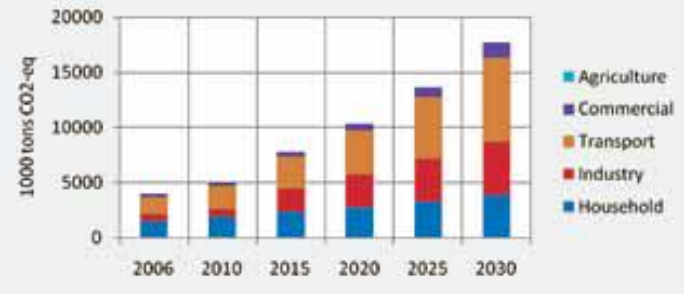

Figure 5.1: GHG emissions from energy demand by sectors (Source: SNC)

Investing in sustainable/green buildings in Mongolia, therefore, offers a compelling opportunity for mitigating GHG emissions while also improving the quality of life for the citizens. The proposed project responds to Mongolia's need to generate ever more resource efficiency in the construction sector.

The proposed PIF is distinct to, and bolsters the impacts of previous projects relevant to the buildings energy efficiency sector such as the UNDP/GEF Buildings Energy Efficiency Project (BEEP) and the Second National Communication. A short table summarizing the distinctions between the proposed project, the Second National Communication and BEEP is presented below.

Outputs		
Second National Communication	**BEEP**	**Proposed GEF Project**
The Second National Communications Report has been effectively used as a platform to improve understanding of climate change and to inform climate change policies across all important economic sectors.	The project aspired to reduce energy consumption in new residential buildings and private homes that were built using the revised Building Codes, Norms and Standards (BCNS).	The project aims to identify, develop and implement Nationally Appropriate Mitigation Actions to facilitate market transformation for energy efficiency in the construction sector.
Identifies and prioritizes key mitigation measures but no implementation and/or demonstration of the actions is being conducted as a part of the national communication activities.	The project successfully developed and demonstrated new designs, facilitated the introduction of superior construction materials and techniques of mainly small family homes (targeted at *Ger* dwellers).	Interventions will focus on technology up-scaling to more ambitious efficiency standards including efficient lighting, efficient cook stoves, thermal insulation, and water saving devices, construction and energy efficiency regulations

[9] National Action Program on Climate Change
[10]Strategies for development of green energy systems in Mongolia, Global Green Growth Initiative report, 2013

		for property developers. Designs and efficient equipment as well as labeling of commercial buildings.
The SNC reports on the 2006 GHG inventory only for major sectors of the economy. Energy consumption monitoring, reporting and verification system for the energy end use sectors is not developed and institutionalized.	Building energy monitoring and reporting systems as well as reference baselines were not established.	Systematic monitoring system will be established and GHG inventory for the construction sector institutionalized.
-	The BEEP was able to engage mostly with small to medium sector private enterprises such as property developers, manufacturers and suppliers of energy efficient products, catering to small and single family homes and apartments. It was not able to work directly on investment projects of large-scale property developers targeting higher income families (e.g., luxury apartments, high-rise residential buildings, etc.) and large commercial properties (hotels, office buildings, retail buildings, etc.). This was partly due to limited resources available in the BEEP and partly due to the fact that the project essentially targeted lower to middle income population.	The project focuses on improving the energy efficiency of commercial buildings and envisions engaging with major private construction companies. Private sector participation will be driven by the positive signals from the government through its existing priority on energy efficient housing policy as well as the level of awareness created by BEEP. Consequently this has encouraged the private sector to seriously consider the upsides of energy efficient technology applications in their investments.
-	It essentially incentivized low to medium income home owners.	Aspires to incentivize both home owners and actors along the supply chain (e.g. property developers, energy efficient products manufacturers, etc.).

A suite of barriers impede the large-scale development of resource efficient buildings. The most notable are discussed below in detail which needs to be systematically addressed.

(a) **Lack of capacity and institutional arrangements in the identification and prioritization of appropriate and cost-effective energy efficient measure:** The selection of mitigation actions at scale w.r.t energy efficiency measures is not undertaken in a systematic manner, resulting in an arbitrary approach that struggles to attract private-sector investment. There is currently no standardized approach to establishing and updating reference baselines across sectors, identifying standard methodologies or assessing individual mitigation actions' contributions to the national targets. Marginal GHG abatement cost curves for climate change mitigation technologies and measures are absent. In its Second National Communication to the UNFCCC, Mongolia presented the potential climate change mitigation options for some of the energy-intensive sectors. However, such options were based only on very limited data and information, rather than on specific GHG emission reference values (i.e. baselines). There is also a lack of institutional arrangements for updating the GHG reference baseline and maintaining the database of potential mitigation actions. Similarly, MRV guidelines and standard methodologies are completely absent. The limited understanding of MRV systems and the capacity to implement them are a major barrier for effective implementation.

(b) **Limited market diffusion of energy efficient technologies**: This barrier can be further elaborated as below:
- Technical barriers: There are key technical barriers that need to be overcome such as the lack of standards for efficient technologies and insufficient capacity to supply efficient equipment and construction materials. Economies of scale in the production of energy-efficient building materials and equipment currently do not exist. Therefore, costs for energy efficient building materials and technical equipment are higher, since they have to be either imported or are produced in limited quantities, which are clear deterrents. Supply of technical services and expertise is also insufficient – although the ongoing UNDP/GEF BEEP has addressed the issue to a greater extent, there is still a dearth of qualified personnel to install and maintain energy efficient equipment, as well as lack of architects familiar with energy saving designs. Moreover, there are no formal certification schemes for craftsmen or builders; materials or equipment. Regarding energy efficiency of buildings and equipment, there is neither regulation of production quality nor standardization of products in the market which eventually compromises the quality of products.

Regulatory and institutional issues: The GEF supported BEEP has been successful in updating existing and developing new Building EE Code/Norms/Standards (BCNS) system to make it more appropriate for Mongolian conditions. Consequently, increasing number of new private homes has been following the updated BCNS EE system and higher levels of average EE levels have been reported. Despite BEEP's positive intervention, the existing BCNS system does not cover all aspects of construction and building equipment. One of the lessons learned through the BEEP is that strict implementation and enforcement of new BCNS remains weak and requires substantial time and effort. W.r.t the institutional issues the state inspection agency lacks capacity to ensure and monitor construction results, standards applied and compliance, more so in commercial buildings.

(c) Financial barriers: Lack of financial ability of target end-user and limited financial capabilities of construction companies have been limiting the propagation of EE technology in the construction sector. Besides, highly subsidized energy prices especially provide disincentives to home-owners to look for more energy efficient solutions. Low emissions sustainable buildings require more upfront investment than the 'baseline'. The increased capital cost is a significant barrier to development, especially for middle to low-income segment where the demand for new homes is projected to increase over the coming years. Even when this barrier is not a constraint, lack of information about the long term economic benefits of efficient design may make developers and residents unwilling to take on the incremental cost associated with sustainable buildings. Financial barriers to the demand side of the market also result in risk for developers who must finance their operations through commercial loans or their own equity. If they are not able to recoup the incremental investment in low carbon or energy efficient properties, or if they take longer to sell, developers will naturally be unwilling to further invest in such business propositions. There is a risk that a faction of large-scale building developers may not be fully supportive of the energy efficient technology demonstrations as envisioned in the proposed project. A more thorough assessment of this barrier (i.e. private sector financial buy in) will be carried out during the PPG exercise by: (1) Identifying the types of properties being planned and implemented; (2) Identifying the typical design and energy features of these commonly implemented construction projects; (3) Typical investment costs and sources of financing for such projects, etc.

(d) Lack of information and awareness: Although the BEEP has been very instrumental in developing knowledge products and generating widespread awareness on EE particularly in the private housing sector, there is still a compelling need to propagate more information on resource efficient buildings, how to assess them, and how to implement them among home-owners, commercial businesses, developers and local administration. There are limited convincing and accessible demonstration projects to provide proof of concept to the skeptical planners, builders and no publicly available models for property buyers to emulate the feasibility and upsides of energy efficient construction.

These challenges have triggered the Government of Mongolia to continue its efforts to accelerate the widespread promotion of energy efficient buildings in a sustainable and timely manner. Some of the targeted interventions under the government's comprehensive package of EE-based policies and projects include the formulation of the draft Energy Efficiency and Energy Conservation Law and Green Development Strategy. The proposed project will complement these broader climate change and economic development strategies. In addition, the government has been lately promoting energy efficiency technology diffusion with a vision where the private sector will have a key role to play. Therefore, without the GEF Project, private sector involvement is likely but the scale is anticipated to be much limited than what has been targeted by the proposed project.

The relevant baseline projects and programs for this proposed project are those being implemented to support existing energy and climate change plans and policies. The baseline projects are illustrated below.

Baseline Project	**Brief Description and Baseline Activities**	**Indicative GEF Incremental Activities**	**Schedule**	**Implementer**	**Annual Budget US $**
Capacity Building Project For NAMAs	The project focuses on the design and execution of capacity development on GHG and identification of feasible NAMA options and associated MRVs. Baseline activities that will form part and parcel of the proposed GEF project include capacity development modules, training tools on GHG accounting systems and effective monitoring of data, reporting and verifying mitigation actions and outcomes.	Trainings for building sector practitioners and decision makers on how MRV can be used as a tool to assess the effects of NAMAs to the broader national development agenda; development of guidelines and standard methodologies to assess, report and verify GHG and non-GHG outcomes.	2012-2017	Climate Change Coordination Office, Ministry of Environment and Green Development	50,000
Eco Loan Program	Provision of loans with discounted interest rate for energy efficient products and services that comply with the buildings codes, norms and standards. Baseline activities that will be subsumed under the proposed project include provision of loans to property developers and manufacturers of energy efficient products; expansion of loan portfolio to cover wider technology options; operational energy efficient and green technology applications to new constructions.	Capacity development and technical due diligence support to financial institutions to expedite the loan process; develop a list of pre-approved technologies for property developers. The incremental features that will be incorporated as a demo for advanced energy efficient technology application showcase (as part of the designed NAMA) will seek GEF assistance.	2010-ongoing	Local commercial Bank	600,000

The Low Carbon Development Partnership Project	The project facilitates the diffusion of low carbon intervention; feasibility assessments and implementation of mitigation actions under the new market mechanism framework. Baseline activities considered for the proposed project includes assessment of feasible options for institutional arrangements; capacity development trainings for private and public sector participants to evaluate, formulate, implement and access financing for NAMAs.	Formulation of detailed marginal cost curves; evaluation of mitigation actions and prioritization of the most cost effective measures; identification of design elements of a NAMA, etc.	2013-ongoing	Ministry of Environment and Green Development	50,000
Clean Air Foundation	As a part of the Clean Air Foundation, the Government of Mongolia incentivizes activities that reduce air pollution in urban areas including energy efficiency in the construction sector. Baseline activities that will be subsumed under component 2 of the proposed project include provision of financial incentive and subsidies to support investments in a range of energy efficient products as well as construction and commissioning of investment projects.	Communication strategies to equip borrowers with information on technology packages. Preparation of business plan and feasibility assessments for advanced energy efficient technologies that are expected to result in higher savings. The incremental features that will be incorporated as a demo for advanced energy efficient technology application showcase (as part of the designed NAMA) will be funded by GEF assistance.	2011-ongoing	Government of Mongolia	200,000
Sustainable and Inclusive Urban Development	The framework for UNDP Mongolia's tentative program on 'Sustainable and Inclusive Urban Development' plans to consolidate three pillars of Urban Environment; Urban Poverty Reduction and Ger area upgrading; and, Inclusive Urban Governance as a way to support the government to advance its urban national policies and plans.	The activities of this project will be subsumed as baseline activities of the proposed project. GEF assistance will be provided to enable urban planners and decision makers to mainstreaming energy efficiency in the construction sector as a part of the overall urban development policies and plans.	2014-ongoing	UNDP Mongolia	100,000

Despite these baseline efforts, identification of concrete mitigation options, detailed planning and financing for a sustainable construction sector will have to be well thought through.

GEF support, therefore, will be strategic in realizing the alternative scenario by augmenting the baseline projects and provide impetus for national planning, policy implementation and stimulating investments to support scaled up mitigation approaches.

Alternative Scenario and incremental reasoning:
Complementing the baseline projects, the proposed GEF project aims to develop an 'umbrella' approach that will incentivize low emission and sustainable development in the buildings sector in Mongolia. It takes a comprehensive approach and expands the operational and financial scope of the ongoing projects such as the UNDP/GEF BEEP to cover additional and more ambitious target areas. For e.g. technology up-scaling

to more ambitious efficiency standards including efficient lighting, efficient cook stoves, thermal insulation, water saving devices, construction and energy efficiency regulations for property developers, etc. It is envisioned that this approach to efficient buildings could, in the future, be nested into a more holistic approach to urban sustainable development. Therefore, a NAMA in the context of the proposed project offers a framework to achieve broad based and comprehensive climate change mitigation activities. The proposed project is structured around three components anticipated to support the achievement of the project objective, i.e. to facilitate market transformation for energy efficiency in the construction sector through the development of NAMA.

Component 1: Establishment of Baseline Energy Consumption and GHG Emissions in the Construction sector - Periodic inventory of energy consumption is a critical first step to effectively manage a sector's GHG emission contributions to the overall GHG emissions because anything that cannot be measured cannot be effectively managed. Measuring emissions for an entire sector is no mean feat and has its unique challenges. But it's a critical first towards successful implementation of scaled up mitigation actions including the NAMAs. The delivery of the outputs from the activities under this component will contribute to effective policy making backed by robust GHG emission inventory and reference baselines for the construction sector. In doing so, the component will address the weakness pertaining to lack of reference data on energy usage and GHG emissions in the construction sector.

This component will therefore primarily comprise of indicative activities such as (a) construction sector energy data collection and analysis; (b) establishment of sectoral and sub-national reference baselines established for the construction sector; (c) definition of GHG emission inventory protocols determined to ensure robust emission accounting; (d) conduct of energy and GHG inventory for the construction sector; (e) formulation of systematic procedures for performing GHG inventories; (f) development of training modules for enhancing skills on effective measurement and collection of data; (g) conduct of a suite of case studies to inform inventory practitioners and institutionalize the GHG inventory system in the construction sector; and, (h) establishment of necessary institutional arrangements, and coordination procedures among a broad range of stakeholders[11] to ensure that they are robust, authoritative and follow best practice guidelines.

Developing sector specific inventory systems can strengthen a country's overall measurement abilities when the same processes is standardized and applied across other dimensions of GHG mitigation actions. The outputs of this component will contribute towards significant enhancements to the national GHG inventory of the energy end use sector in the Third National Communication (TNC) of Mongolia. Close consultations with the TNC project team will be conducted to exchange relevant information.

Component 2: Development and Implementation of NAMA in the Construction Sector - This component responds to the underlying policy, market and investment barriers to the development and implementation of feasible scaled up mitigation actions. The successful delivery of the outputs from the activities under this component will contribute to the development and implementation of a prioritized NAMA in the construction sector. NAMAs can play a fundamental role in moving a sector towards a low carbon development trajectory. The project will therefore lead to a well-designed NAMA that will couple policy actions and barrier removal activities to low carbon investment and enhance commercial attractiveness of investment opportunities for the private sector.

In achieving this outcome, the following indicative activities are envisioned (a) formulation of detailed marginal GHG abatement cost curves for the construction sector; (b) in-depth evaluation of mitigation

[11] An effective institutional arrangement will be established for smooth coordination among a broad range of stakeholders involved in GHG inventory – data, collection, analysis, etc. (e.g., national government such as Ministry of Environment and Green Development, Ministry of Construction, Ministry of Energy; local governments; project developers; property owners, etc.)

actions and prioritization of the most cost effective measures; (c) conduct of policy studies to come up with recommendations on concerted policy framework to support broad-based mitigation actions that reduce GHG emissions and simultaneously achieve development objectives in the construction sector; (d) identification of design elements of a NAMA reflecting, for instance, objective and targets of the NAMA, scope and rationale, delineation of the NAMA boundary, implementation and operational costs, timeframe, etc.; (e) assessment and provision of recommendation on institutional arrangements for the operation and coordination among government agencies and key stakeholders for the construction sector NAMA; (f) conduct of capacity development trainings for private and public sector participants to evaluate, formulate, implement and access financing for NAMA; (g) implementation of the construction sector NAMA; (h) commissioning of energy efficient technology applications for pilot demonstration such as efficient lighting, cook stoves, water saving faucets, retrofits, installation of consumer control equipment for demand side management, etc. in at least 70 public and commercial buildings (including office buildings, hotels, etc.). The GEF incremental activity is envisioned to collaborate with the project proponents of baseline projects (such as Eco Loan Program and Clean Air Foundation) to develop a list of pre-approved technologies from which the property developers can flexibly choose in order to achieve the necessary cost and energy savings requirements of the loan application process. The indicative incremental activity will furnish the borrowers with information on technology packages that are eligible under the loan scheme such as investment cost, payback period, emission reduction potential, etc. This way, borrowers will better equipped to make informed investment decisions on advanced energy efficient technology packages to achieve higher energy savings. The proposed project builds on the current financial structure already in place between the aforementioned baseline projects, i.e., the Eco Loan Program and Clean Air Foundation. During the PPG, the proposed project will investigate various options on how the subsidy program can complement the Eco Loan scheme to come up with a financing structure for NAMA implementation. The feasibility of a dedicated NAMA fund to blend different sources of financing will also be investigated during the PPG stage.

It is vital that the designed NAMA should build on the most important existing programs addressing the construction sector including the groundwork laid by the UNDP-GEF BEEP. The BEEP was able to successfully revise the BCNS system, bring together key stakeholders in the construction sector and create substantial awareness on EE, primarily in private housing sector. This momentum achieved by BEEP needs to be sustained and scaled up in a more ambitious manner – which is where a NAMA approach becomes more relevant and timely.

Component 3: MRV system for mitigation actions in the construction sector - A critical requirement for NAMAs is that actions be implemented in a measurable, reportable and verifiable (MRV) manner. Accurate MRV is paramount for ensuring implemented mitigation actions achieve progress towards emission targets. Recognizing the role of NAMAs to reducing GHG emissions while simultaneously promoting country's sustainable development objectives, the project will advocate for a broader approach to MRV that establishes metrics such as: (a) specific energy consumption (b) GHG emissions and (c) sustainable development (e.g. job creation, health, etc.), that can be used in the construction sector. Such an approach to MRV of NAMA impacts would allow policy makers to track and highlight the effects of NAMAs on catalyzing economic growth, poverty reduction and environmental conservation. The successful delivery of the outputs from the activities under this component will ensure mitigation policies and financing strategies are effective.

Indicative activities include (a) in-depth assessment to determine key indicators and metrics (such as those for mitigation actions, progress, GHG emissions and sustainable development) that will be monitored, reported and verified; (b) development of guidelines and standard methodologies to assess, report and verify GHG and non-GHG outcomes; (c) implementation of MRV system for the prioritized NAMA; (d) conduct of capacity development trainings to effectively monitor data, evaluate metrics, report and verify mitigation actions and outcomes; trainings to practitioners and decision makers on how MRV can be used as a tool to

assess the effects of NAMAs to the broader national development agenda. The bottom up data produced under the project from the construction sector will feed into the National GHG inventory for the TNC.

The detailed design of the pertinent activities that will be implemented in each of the project components will be done during the PPG exercise. The PPG outputs will include but not limited to: (a) Detailed baseline assessment and validation of data/information to confirm the barriers and on-going baseline interventions (including budgets); (b) Completed assessment of policy, legal and regulatory issues to create an enabling environment for private sector investment; (c) Completed review of International best practices on programs and policies (including laws/regulations) concerning the commercialization of energy efficiency in the construction sector; (d) In-depth assessments of energy efficient technological interventions in the construction sector and identification of the most feasible options; (e) Detailed feasibility study on various potential financing options for NAMA implementation.

Global environmental benefits

The development of NAMAs consists of identification, design and implementation of suitable national mitigation options, thus ensuring a net decrease and/or avoidance of global GHG emissions. With the proposed GEF intervention, the potential global environment benefit in terms of CO_2 emissions reduction is estimated to multiply. Through investments in demonstration projects in the pilot NAMA, it is anticipated that approximately 85,000 tCO_2e in cumulative direct and post project emissions will be avoided over the lifetime of the projects. This translates to an indicative unit abatement cost of approximately US$ 16/tCO_{2e}. The basis for the estimation of the GHG emissions avoided are as follows: The average baseline specific energy consumption of buildings in Mongolia is 165 kWh/m^2 and the indicative end of the project energy consumption is anticipated to be 100 kWh/m^2 annually leading to an annual energy savings of 65 kWh/m^2. The project is expected to target a total floor area of 50,000 m^2 in at least 70 buildings through direct interventions. This leads to a cumulative savings of approx. 85,000 tCO_2 in direct emission considering the grid emission factor of 1.06. This project concept is based on a set of conservative assumptions[12] that will be further validated - at the stage of project design.

Innovativeness, sustainability and potential for scaling up

The proposed project is a first attempt to pilot test the concept of NAMA in the construction sector in Mongolia. Current activities on NAMAs in the country target mainly NAMA 'readiness' and not implementation of pilots. The innovative feature of the proposed project is in the approach of promoting and implementing climate change mitigation measures in a more holistic manner in a sense that the NAMA aims at instituting multiple interventions along the value chain to ensure that the construction sector is energy efficient. For instance, the proposed project aspires to encourage and incentivize suppliers of energy efficient products and services (such as large scale commercial property developers, suppliers and manufacturers of energy efficient appliances, buildings materials, etc.) along with property owners for a faster uptake of energy efficient solutions. This is a novel approach to the country and has not yet been tried in earnest before.

Sustainability of project results is anchored in the fact that NAMA reflects a strong commitment from the government and creates a comprehensive package of enabling policies and a tangible plan of commercial investment opportunities. This in turn drives private sector investments. In parallel, the successful outcomes of the project will form a robust capacity among government authorities and market participants; establish technical knowledge and put in place institutional arrangements on NAMAs. This will simultaneously contribute to the sustainability of the project outcomes. Moreover, the project advocates for aligning the NAMA with core national development objectives. Consequently, it is

[12]Firstly, the baseline energy consumption is at the level achieved by the BEEP (assuming that the compliance rate is 75%), i.e. 165 kWh/m^2. Secondly, the EOP energy consumption will be about 100 kWh/m^2, which is much more ambitious than that achieved by the BEEP. The grid emission factor is 1.06. The basis for the assumptions is the performance of the BEEP project.

envisioned to build the country's political support and ensure that such policies are sustained after the GEF assistance has ended.

The project includes the showcase of the NAMA approach in at least one city but if successful this approach can be used as a model for implementing climate change mitigation policies to expand in scope and cover additional cities, representing a tremendous potential for scaling up. The proposed project therefore highlights the transformational role NAMAs can play in moving a country and sector toward a low-carbon development path.

A.2. Stakeholders: Identify key stakeholders (including civil society organizations, indigenous people, gender groups, and others as relevant) and describe how they will be engaged in project preparation:

Stakeholder	Role in the Project Design & Preparation
1. Ministry of Construction and Urban Development (MCUD) and Ministry of Environment and Green Development (MEGD)	Lead partner responsible for development and detailed design of the project. Coordinating body for all activities related to NAMA readiness and implementation; responsible for liaison with other government agencies; project development management; and project development financial management.
2. Ministry of Energy (MoE)	Coordination on the design of the project, in particular on the reference baselines and underlying data and information.
3. Mongolian Academy of Science and its research institute	Provision of general guidance and advice on cost effectiveness of technology, interventions, policy and feasibility studies
4. Municipal Government (e.g., Cities of Ulan Bator, Erdenet, Darkhan)	Preparation to host the project activities
5. State Specialized Inspection Agency (e.g., Construction Development Center, State Department for Infrastructure)	Advisory on and supporting enforceability aspects of related legislations
6. Civil Society Groups and NGOs (e.g. Mongolian Civil Engineers Association, Building Materials Manufacturer's Association, etc.)	Provision of policy and technical advise
7. Development partners (e.g., Millennium Challenge Account)	Technical inputs and coordination during project design and investment activities Ensuring complementarities and synergies with activities of other on-going and future projects
8. Financial institutions (e.g., Xac Bank)	Participation in the formulation of financial strategies and barrier removal to increase investment in low carbon transport projects
9. National media	Information dissemination to general public

A.3. Risk: Indicate risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the project design (table format acceptable):

Risks will be further analyzed during the formulation of the full Project Documents. Risks identified during the PIF formulation stage are summarized as below.

Description	Rating	Mitigation measures
Policy measures are not in place to fully implement NAMAs	Moderate	The project will be implemented jointly with the MEGD, one of the four mainstream policy making Ministries that hosts the Climate Change Coordination Office. Furthermore, establishment of multi-stakeholder task forces will be ensured with representations from Government entities, academia and NGOs by decree of high-level Government

		bodies, in order to support setting-up of relevant regulatory mechanisms for NAMA.
Ineffective coordination that leads to overlaps and lost opportunities for synergy	Low	The project will focus on strengthening overall coordination capacity of the Climate Change Coordination Office. Regular coordination meetings with key stakeholders will be supported in order to enable a discussion platform, establish a close working relationship and avoid duplication of efforts. Continuous emphasis will be placed on maintaining synergies with the ongoing initiatives by the Government, external partners and NGOs.
Weak capacities of stakeholders for project implementation and availability of reliable and sufficient amount of data	Moderate	Systematic approach will be applied to address weakness in institutional capacities. This includes a) identifying stakeholders and conduct detailed assessment for capacity needs; b) ensuring data availability by providing necessary measurement training tools and equipment, etc.
Climate Change impacts	Moderate	According to the second national communication, the adverse impacts of climate change are linked to high concentration of population, resources and infrastructure. Adequate emphasis will be placed to enhance the resilience of the energy efficient buildings to extreme climate variability. Such thinking will be incorporated into all stages of project design and implementation. The project will fully coordinate with the climate change adaptation teams and experts in the Ministry of Environment to help authorities identify such risks and integrate appropriate response measures in the proposed mitigation actions.
The level of co-financing amount may not support the project implementation promptly and sufficiently due to inadequate private sector financial buy in.	Moderate	The project will help prepare high quality assessments, feasibility studies, investment appraisals to facilitate decision making by co-financing partners.
The construction sector may not support the idea of implementing CCM measures either on their own or through the NAMA process.	Low	The project will facilitate public private dialogue and engage the private sector early on to solicit their perspectives and needs for low carbon development.
Low level of government support in the effective enforcement or proposed policies and regulations that support the implementation of NAMAs.	Moderate	The project will initially implement the policies and guidelines to the pilot cities to gauge their effectiveness. That will assist the relevant government authorities in the finalization, approval and effective enforcement. Besides, UNDP has a track record of successfully engaging with the authorities on climate change projects. The risk can be effectively mitigated through continued provision of the on-going assistance, technical backstopping and communication to encourage commitments from the authorities.

A.4. Coordination: Outline the coordination with other relevant GEF financed and other initiatives:

The project development team will endeavor to establish and strengthen linkages with other agencies and actors that are currently planning or implementing relevant projects which will contribute to the overall outcome of the proposed GEF project. The project will be closely coordinated with the following initiatives:

(a) The Capacity Building Project for NAMAs and the Low Carbon Development Partnership projects are being implemented by the Climate Change Coordination Office, Ministry of Environment and Green

Development. The project development team will liaise and consult with the implementers of this project, in designing and implementing the policy, market and technical barrier removal activities under Component 1, 2 and 3 of this proposed GEF project.

(b) Clean Air Foundation: This ongoing project is aimed at incentivizing activities that directly reduce indoor and outdoor air pollution in urban areas including enhancement of energy efficiency in buildings. The project development team will interact and consult with the implementers of this project (particularly those working on the energy efficiency capacity development activities) in designing and implementing the technical and information barrier removal activities under Component 2 of this proposed GEF project.

(c) Eco Loan Program: The project development team will also coordinate with the financial institutions and commercial banks providing financial products to SMEs and manufacturers who are involved in the provision of products and services aimed at enhancing the energy efficiency of the construction sector to ensure potential synergies in designing activities related to financial barrier removal activities.

The establishment of links with the relevant agencies and ongoing projects/programs is expected to help in identifying the relevant activities that will build on their respective achievements. During the PPG stage numerous stakeholders' consultation including the log frame analysis will be organized to discuss related issues and concerns and prepare comprehensive structures for project implementation and management. This will ensure complementarity and build on best practices and lessons learned of the stakeholders.

B. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:

B.1 National strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NAPs, NBSAPs, national communications, TNAs, NCSAs, NIPs, PRSPs, NPFE, Biennial Update Reports, etc.:

1. Mongolia's Millennium Development Goals (MDGs): Mongolia's MDG 7 on Environmental sustainability set target to reduce the per capita carbon dioxide emission from the 1990 baseline of 11.52 tons down to 4 tons.
2. Second National Communications to the UNFCCC (2010) states energy combustion and fugitive emissions as the largest source of CO_2 emissions, accounting more 50 % of gross emissions of CO_2 in 2005.
3. Mongolia's NAMA program submitted to the UNFCCC contains four specific mitigation actions for the construction and housing sector focusing on improved energy efficiency in the buildings.
4. National Action Program on Climate Change (NAPCC) 2011 sets out strategic objectives in 5 areas including energy efficiency measures in the housing sector and quantitative inventories of GHG emissions and sinks in Mongolia.
5. Government Action Plan (2012-2016) prioritizes the provision of modern housing to the population and ensure updated Building Codes, Norms and Standards in line with international standards and economical and efficient solutions in energy consumption and operational costs are introduced;
6. National Green Development Strategy submitted for 2013 autumn session of the Mongolian Parliament sets an objective to "introduce modern progressive energy efficient green technologies into urban development and decrease heat loss in buildings by 30 percent from the level of 2010 by the year 2020 and 50 percent by 2030".
7. Draft Law on Energy Efficiency (to be presented in the Parliament) promotes regulatory framework on energy efficiency for pursuing resource-efficient green development path.

B.2. GEF focal area and/or fund(s) strategies, eligibility criteria and priorities:

The project is consistent with GEF Climate Change Objective 2 and 6. At COP 17 in Durban, the Parties recognized "the need for support for enabling activities to assist developing country Parties in the identification and preparation of nationally appropriate mitigation actions for submission to the registry, and support for their implementation". In this line, the Government of Mongolia is requesting support for the definition, design, and implementation of NAMAs in the buildings sector with the objective of achieving the country's GHG emission reduction voluntary target.

B.3 The GEF Agency's comparative advantage for implementing this project:

At the national level, UNDP Mongolia defines the climate change adaptation and mitigation as a core of the environmental thematic area interventions within the United Nations Development Assistance Framework (UNDAF) for the period of 2012-2016. In response to the need to adapt to and mitigate the changing climate, Government of Mongolia and UNDP jointly worked on updating the National Action Program on Climate Change (NAPCC). The NAPCC was approved by the Parliament in January 2011. In support of compliance with the Copenhagen accord and implementation of NAPCC, UNDP Mongolia intends to:

- Support the development of green growth policies to promote energy and resource efficiency,
- Strengthen implementation of Nationally Appropriate Mitigation Actions (NAMA),
- Improve solid and hazardous waste management.

Through implementation of several projects on Building energy efficiency since late 1990's, UNDP Mongolia has gained substantial experiences in building capacities in the construction sector, improving building codes, norms and standards system, introducing new technologies, energy audit and labeling of buildings, reducing heat consumption and improving insulation.

Currently, UNDP is collaborating with the Government on a number of relevant initiatives, including formulation of a national policy and strategy on green development, post-2015 development agenda and finalization of a Law on Energy Efficiency. UNDP's ongoing REDD+ readiness support to Mongolia through the UN-REDD program will complement the interventions proposed for the current project, particularly those on establishment of MRV system. Acknowledging the above described comparative advantages, the Government of Mongolia requested UNDP's assistance in the formulation and implementation of the proposed project and is ready to commit a substantial amount of funding.

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

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

NAME	POSITION	MINISTRY	DATE
Mr. A. Enkhbat	Director, Division of Science and Clean Technology, GEF Operational Focal Point	**MINISTRY OF ENVIRONMENT AND GREEN DEVELOPMENT**	**10 JULY 2013**

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for project identification and preparation.					
Agency Coordinator, Agency name	**Signature**	**DATE** *(MM/dd/yyyy)*	**Project Contact Person**	**Telephone**	**Email Address**
Adriana Dinu UNDP – GEF Executive Coordinator and Director a.i.		05/14/2014	Rakshya Thapa Regional Technical Advisor EITT	+66 2304 9100 ext. 5038	rakshya.thapa@undp.org