



PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: **Full-sized Project**

TYPE OF TRUST FUND: **GEF Trust Fund**

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PART I: PROJECT INFORMATION

Project Title:	Energy Efficiency Improvement in Commercial and High-Rise Residential Buildings in Viet Nam		
Country(ies):	Viet Nam	GEF Project ID: ¹	5365
GEF Agency(ies):	UNDP	GEF Agency Project ID:	5245
Other Executing Partner(s):	Ministry of Construction	Submission Date:	03 April 2013
GEF Focal Area (s):	Climate Change	Project Duration (Months)	48 months
Name of parent program (if applicable):	n/a	Agency Fee (\$):	303,810
<ul style="list-style-type: none"> • For SFM/REDD+ <input type="checkbox"/> • For SGP <input type="checkbox"/> 			

A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK²:

Focal Area Objectives	Trust Fund	Indicative Grant Amount (\$)	Indicative Co-financing (\$)
CCM-2	GEFTF	3,198,000	16,180,000
Total Project Cost		3,198,000	16,180,000

B. INDICATIVE PROJECT FRAMEWORK

Project Objective: Improved energy utilization performance of commercial and high-rise residential buildings in Ho Chi Minh and Hanoi						
Project Component	Grant Type ³	Expected Outcomes	Expected Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Co-financing (\$)
1. Improvement and enforcement of energy efficiency building code	TA	<p>Enforced, improved and comprehensive policy, legal, and regulatory frameworks on the energy efficient design, construction and operation of commercial and high-rise residential buildings</p> <p>Strengthened compliance of the energy efficiency building code for commercial and</p>	<p>1.1 Improved and enforced implementing policy framework and regulations on EE in buildings, including revised/improved EE Building Code (EEBC), with a full EEBC compliance guide.</p> <p>1.2 Approved voluntary guidelines that support EE building initiatives and market</p> <p>1.3 Established and operational EE certification scheme for buildings</p> <p>1.4 Established and enforced</p>	GEFTF	650,000	800,000

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.

		high-rise residential buildings in HCMC and Hanoi	building energy monitoring and reporting system 1.5 Established and enforced building energy benchmarking system that is linked to the certification scheme			
2. Buildings market development support initiatives	TA	Increased local capacity in the EE design, construction, and operation of commercial and high-rise residential buildings	2.1 Formulated, approved, funded and implemented financial mechanisms and incentives to support EE efforts in the buildings sector and cost norms for construction. 2.2 Fully established, staffed, funded and operational Centers for Energy Efficiency in Buildings (CEEBs) under MoC 2.3 Trained CEEB staff to implement and become trainers on EEBC, serve as energy managers in designated buildings, energy auditors, and on the building M&R and benchmarking systems 2.4 Operational support program for ESCOs in the negotiation and implementation of building energy performance contracts 2.5 Completed energy consumption survey of 100 commercial and high-rise residential buildings	GEFTF	800,000	1,400,000
3. Building EE technology applications and replications	Inv	Increased use of EE building materials and application of EE building technologies in HCMC and Hanoi	3.1 Five-year EC plans for 20 selected commercial and high-rise residential buildings 3.2 Completed demonstrations of the design, application and operation of EE equipment, building materials and building energy monitoring and management/control systems in 20 selected commercial and high-rise residential buildings based on the EEBC. 3.3 Documented results and lessons from 20 demonstrations of implementing EEBC in new and existing buildings	GEFTF	1,598,000	13,345,000
Subtotal					3,048,000	15,545,000

HSBC forecasts that Viet Nam will be one of the world's top 50 economies in 2050. Goldman Sachs considers Viet Nam as part of the Next Eleven, eleven countries with high potential of becoming the world's largest economies in the 21st century, along with the BRICs. Another discernible trend has been the rapid rate of urbanization, which stands at 3% per year. Ho Chi Minh and Hanoi, the two largest cities, already have a population of 9 million and 6.5 million respectively.

The country's economic dynamism has not come without environmental consequences. With annual carbon dioxide emissions of 122 million tonnes, Viet Nam ranks 18th among developing countries. At current trends, Viet Nam's GHG emissions could triple by 2030 unless significant mitigation options are undertaken. As more and more people move to urban areas in search of economic opportunities, the number of buildings needed to house them continues to rise. That poses a challenge to both the local and global environment since buildings are major consumers of energy and are responsible for 30-40 percent of all carbon dioxide emissions. Nearly 50% of Viet Nam's total energy consumption comes from coal and oil. Looking specifically at the electricity sector, the grid emission factor is about 0.57 tCO₂/MWh, which reflects the heavy reliance on fossil fuels.

Compounding matters, the energy performance (i.e., specific energy consumption) of most buildings is poor, leading to a waste of energy of around 20-30%.⁸ Based on a survey conducted in 2010, the average specific energy consumption (SEC) of office buildings in Viet Nam is estimated to be 312 kWh/m²/year, which is considerably higher than that of similar buildings in Hong Kong or Singapore. Furthermore, the total gross floor area⁹ of buildings in Viet Nam continues to rise dramatically, by as much as 9% per year. Consequently, there are significant opportunities to reduce energy demand in the built environment. The main barriers to energy efficiency in commercial and high-rise residential buildings in Viet Nam are lack of enforcement of the EE building code; lack of capacity to develop financial mechanisms and incentives to support application of EE measures in buildings; limited technical capacity on the part of CEEBs and other building practitioners; low level of awareness among building developers, owners, administrators and operators; and, few successful demonstrations of the design, construction and operation of energy efficient or low-carbon buildings.

Baseline scenario and any associated baseline projects

While the Ministry of Construction adopted a mandatory EE building code in 2005 which stipulates minimum energy efficiency requirements for the design, construction and operation of new buildings or major renovations of old buildings, the implementation of the EEBC has faced challenges. The building code compliance administration and infrastructure are not properly functioning because the code officials responsible for administering the EEBC are not sufficiently knowledgeable about the regulations or energy saving strategies. Importantly, there is also a lack of an EE certification system for buildings.

Currently, the average annual electricity consumption of all commercial and residential buildings in Viet Nam is about 32,700 GWh, corresponding to 19.4 million tonnes of CO₂ emissions.¹⁰ Under the baseline scenario, the floor area of commercial and high-rise residential buildings is expected to increase by an additional 24 million m² by 2015, resulting in more than 36 and 56 million tonnes of CO₂ emissions in 2015 and 2020 respectively. Assuming an average annual growth rate of 9%, the expected BAU building floor area for commercial and high-rise residential buildings in 2020 would be about 75 million m². To respond to this alarming trend, the government has launched the Viet Nam

⁸ Energy efficiency in design and construction of high-rise and commercial buildings in Viet Nam, accessible at: <http://www.seas.com.vn/vn/tin-tuc/8/tiet-kiem-nang-luong-trong-thiet-ke-va-xay-dung-cac-cong-trinh-cao-tang-va-thuong-mai-tai-viet-nam-.html>

⁹ This refers to the total floor area inside the building envelope, including the external walls, and excluding the roof.

¹⁰ These figures do not include public buildings, which are in themselves large energy consumers.

National Energy Efficiency Program (VNEEP). The VNEEP is the first-ever comprehensive program to institute measures for improving energy efficiency and conservation in all sectors of the economy in Viet Nam.

Phase 2 (2011-15) aims to expand each component, based on lessons learned from Phase 1. So far, about \$4.25 million of the state budget has been allocated under this program for EE projects across a range of sectors. Component 5 of the VNEEP (Phase 2) targets energy efficiency and conservation in buildings. This component of VNEEP II has two main sets of activities: organizing training courses on EE&C measures in buildings for provincial Department of Construction staff and applying EE&C measures in five selected pilot buildings. The program does not have any activities on strengthening compliance with the EEBC. A report on Phase 1 (2006-2010) showed that the program had achieved total energy savings equivalent to 3.4% of total energy consumption, based on the results achieved by projects nationwide, across all components.

In addition, UNDP Viet Nam has three ongoing projects that are relevant to this proposed GEF project: (1) Strengthening sustainable development and climate change planning, (2) Strengthening national capacities to respond to climate change in Viet Nam, reducing vulnerability and controlling GHG emissions; and (3) Strengthening capacity on climate change initiatives in the industry and trade sectors. Selected activities from these projects collectively worth US\$ 2.07 million will be subsumed into the proposed GEF project. In this regard, such activities are baseline activities of the proposed GEF project, and the US\$ 2.07 million collective budget of such activities is considered part of the co-financing of the GEF project.

The relevant activities of the three ongoing UNDP projects include:

- (1) Strengthening sustainable development and climate change planning:
 - Develop a national action plan for the implementation of the Green Growth Strategy (GGS), which would include related research, consultations and workshops to set emission reduction targets
 - Review and develop investment policies towards low-carbon development
- (2) Strengthening national capacities to respond to climate change in Viet Nam, reducing vulnerability and controlling GHG emissions
 - Build capacity for CC policies (including strategies and action plans for mitigation and adaptation) and implementation,
 - Develop national and provincial climate change scenarios
 - Develop MRV for national GHG emissions
 - Capacity building and technical support for the formulation and implementation of provincial CC action plans
- (3) Strengthening capacity on climate change initiatives in the industry and trade sectors
 - Review policies in the industry sector including those related to building materials (steel and cement)
 - Develop policies and a mechanism to involve the private sector and service providers in low-carbon development
 - Develop banking policies and financial mechanisms and products to promote low GHG emissions/low-carbon development
 - Develop NAMAs for selected sectors including steel and for some large cities, including Hanoi and HCMC

The activities are essential to the success of the GEF project because they will help create an enabling environment for low carbon development, will build monitoring, reporting, and verification capability, and will put in place financial mechanisms for low emission development. The co-financing

contribution would fall into the category of what UNDP refers to as “parallel financing” since the funding would be administered separately.

Proposed alternative scenario

The proposed alternative to the baseline scenario is an enhanced GHG emission reduction from Vietnam’s buildings sector, the magnitude of which is about four times that which could be realized from the successful implementation of Component 5 of the VNEEP II. Compliance with the EE building code in Viet Nam’s two main cities is expected to reach 50%. For this proposed GEF project that will contribute to the realization of the envisioned alternative scenario the objective is to improve the energy utilization performance of commercial and high-rise residential buildings in Ho Chi Minh and Hanoi. There is general agreement among building sector practitioners that in order to transform the buildings market, a comprehensive policy package is required that aims to control (via restrictive regulations), motivate (via incentives), and call for attention (via awareness-raising). The following three components, following this logic, will support the achievement of the project objective.

Component 1: Improvement and enforcement of energy efficiency building code (EEBC)

Under this component, the MOC’s capacities will be strengthened to improve policy frameworks, standards, and guidelines regarding energy efficiency in buildings. This component will comprise of activities on EE policy development in the buildings sector covering the lifecycle of several types of high-rise residential and commercial buildings, ranging from the design, selection of materials, building systems, and construction methods to operations and maintenance and energy audits. Such activities will deliver an improved implementing policy framework and regulations on EE in buildings, including revised/improved EE Building Code (EEBC), with a full EEBC compliance guide. Advocacy and promotional activities will also be implemented to lobby and secure government approval of the improved policy framework and regulations and their enforcement.

Activities on the development of technical tools required for managing and implementing EE measures in buildings in accordance with laws, regulations and the national program, such as voluntary guidelines that support EE building initiatives and market; EE certification scheme for buildings; building energy monitoring and reporting system; and a building energy benchmarking system that is linked to the certification scheme. As in the improved EE buildings policy framework and the improved EEBC, appropriate lobbying and advocacy work will be done to secure the approval and facilitate the enforcement of these tools. These approved and enforced tools will contribute to a greater level of enforcement and compliance with the EE building code.

For new buildings and existing buildings that are planning major retrofits, compliance with the code will be enforced during the design stage and operation. During the design stage, building owners will be required to provide compliance documents that show all pertinent data and features of the building, equipment and systems. Construction permits will be issued based on the building design. Once the buildings are constructed or retrofitted, an on-site inspection will be carried out and certificates will be issued to building owners to confirm compliance with the code.

The successful implementation of the envisioned activities will deliver the necessary outputs that would contribute to the realization of the following expected outcomes: (a) Enforced, improved and comprehensive policy, legal, and regulatory frameworks on the energy efficient design, construction and operation of commercial and high-rise residential buildings; and, (b) Strengthened compliance of the energy efficiency building code for commercial and high-rise residential buildings in HCMC and Hanoi. By the end of the project, it is expected that compliance with the EE building code in these two

main cities in Vietnam will increase from the current level of 10% to up to 50% in 2017.¹¹

Component 2: Buildings market development support initiatives

This component broadly seeks to enhance the capacity of the building sector stakeholders to design, finance and implement EE measures. One of the key outputs will be the set-up of a suitable financial support mechanism (e.g., an innovative loan guarantee fund) and fiscal products to support EE building initiatives, in close collaboration with VNEEP, the Vietnam Environmental Protection Fund and VietinBank (a commercial bank active in financing energy efficiency projects). This component will also include the development of economic evaluation and modeling tools for EE and EC measures. These activities will result in formulated, approved, funded and implemented financial mechanisms and incentives to support EE efforts in the buildings sector and cost norms for construction.

Included also under this component is the capacity building of the Centers for Energy Efficiency in Buildings (CEEBs), which are expected to play an important role in implementing the EE Building Code. CEEB staff will be trained on EE management models/tools, energy auditing, M&E and benchmarking systems, and reporting. Training will also be extended to ESCOs, energy service providers, and selected consulting firms on EE technologies, energy auditing, cost-benefit analysis and lifecycle analysis. An energy consumption survey will be carried out in 100 commercial and high-rise residential buildings, the results of which will feed into the building energy monitoring and reporting system envisaged under component 1.

These activities will lead to fully established, staffed, funded, and operational CEEBs; trained CEEB staff to implement and become trainers on EEBC, serve as energy managers in designated buildings, energy auditors, and on the building M&R and benchmarking systems; and an operational support program for ESCOs in the negotiation and implementation of building energy performance contracts. As a result of these buildings market development support activities, it is expected that there will be increased local capacity in the EE design, construction, and operation of commercial and high-rise residential buildings.

Component 3: Building EE technology applications and replications

It is estimated that energy savings of up to 25% and 40% can be achieved in existing and new buildings respectively if energy solutions are applied systematically and are well managed.¹² This component will target the enhancement of energy efficiency performance in both new construction and the retrofit/refurbishment in 20 buildings in Hanoi and Ho Chi Minh City, with the application of the technical specifications and guidance provided in the improved EEBC. Five-year energy conservation plans will be developed for the 20 selected commercial and high-rise residential buildings. Once the five-year plans are in place, the design, application and operation of EE equipment, building materials and building energy monitoring and management/control systems will be demonstrated in the 20 selected buildings based on the EEBC. By demonstrating pilot models for the uptake of EE&C management activities in building design and operation, the expected outcome from this component is the increased use of EE building materials and application of EE building technologies in HCMC and

¹¹ The Ministry of Construction (MOC) developed and adopted the building code in 2005 with limited resources and timeframe and without the full engagement of key stakeholders. As a result, the building code is limited in scope and includes unfeasible provisions. In addition, the Ministry has limited institutional and technical capacity and lacks a monitoring and inspection mechanism. Consequently, MOC estimates that 90 percent of all high-rise buildings constructed to date are not in compliance with the building code. Under the BAU scenario, compliance with the EEBC would only be expected to increase marginally, to an estimated 20% over the next ten years, due to the training provided under VNEEP.

¹² Hanoi Energy Conservation Centre, accessible at:
<http://www.ecchanoi.gov.vn/default.aspx?page=home&portlet=20&cat=36&content=831>

Hanoi. Results and lessons learned will be documented and disseminated for wider information and application.

Incremental cost reasoning and expected contributions from the baseline , the GEFTF, LDCE/SCCF and co-financing

While there has been significant progress over the past decade in the development of building codes in Southeast Asia, the process of implementing energy efficiency improvements in the buildings sector in Viet Nam is still slow. The Government of Vietnam has adopted some relevant policies that support energy efficiency in the construction and building sectors. However, MOC's energy efficiency building code (2005) has not been implemented in practice and its enforcement is limited due to lack of institutional capacity and clear guidelines in the sector. In addition, the Ministry lacks a monitoring and inspection mechanism.

The baseline activities from the VNEEP II, as well as those from the UNDP-funded baseline projects, are only expected to contribute marginally to stronger compliance with the EEBC, as these initiatives do not specifically target enhanced compliance, and if each of these are implemented separately, will not contribute synergistically in the achievement of the MOC's energy efficiency targets for the Vietnamese buildings sector. Without the GEF intervention through actions that will remove barriers to the improved enforcement of the EEBC and the widespread application of EE building technologies, it will likely take some years to achieve benefits in terms of energy savings, energy supply cost reductions and GHG emission reductions. This project will provide vital support to MOC in effectively enforcing the EE&C Law with regard to EE in the buildings sector, while helping to set up fiscal incentives and facilitate access to commercial financing, and greatly enhancing the level of awareness of building professionals on the benefits of energy efficiency.

Global environmental benefits (GEFTF, NPIF) and adaptation benefits (LDCE/SCCF)

With the proposed GEF intervention, it is anticipated that EE compliance in buildings will increase from 10% in 2013 to 50% in 2017. The PIF makes a conservative assumption (to be validated at the stage of project design and documentation) that the compliance will reach up to 50% in 2017. As a result, based on reliable baseline estimates, the incremental cumulative energy savings directly resulting from the GEF intervention from 2013 to 2020 would be about 2,690 GWh and the avoided GHG emissions are estimated at 1,092,000 tonnes of CO_{2e}.¹³ These figures have been estimated in accordance with the expected energy savings of 62 kWh/m²/yr (20%), and an assumed rate of improved EE compliance in buildings of 10% per year (2013-2020) with a causality factor of 0.6 from 2015 to 2020.

Innovativeness, sustainability and potential for scaling up

What makes this project innovative is that it will create incentives for building owners and managers to invest in energy efficiency in their respective buildings and it will support the development of ESCOs who can engage in energy performance contracting. These are distinct features that have not yet been tried in earnest in Viet Nam.

The project will lay the groundwork for a supportive policy and institutional environment that will sustain project results and stimulate subsequent investments in this sector. CEEB staff will be trained on all aspects of building energy efficiency, thus strengthening their capability to carry out their envisaged role. This enhanced capacity, along with an updated EE building code and successful

¹³ Conversion factor: 0.57 kg/kWh in Vietnam

demonstrations, will catalyze a transformation in the building market. By the end of the project, Ministry of Construction officials will have the required knowledge and experience to effectively implement and enforce the EE building code. An EE certification scheme will be in place to certify the energy performance of new and retrofitted buildings. Designers, developers, and building owners will have a greater level of awareness of energy efficiency and conservation. With building code officials equipped with the requisite capacity and tools such as the building energy monitoring and reporting system, it is expected that the level of compliance with the EEBC will continue to increase in Hanoi and Ho Chi Minh following project completion.

Considering the rapid growth in building stock outlined elsewhere in the PIF, there is tremendous potential for replicating the demonstrated EE building technologies and techniques. The 100 commercial and high-rise residential buildings at which the energy consumption survey will be carried out will provide an immediate opportunity for scaling up the project results. Beyond that, the enabling environment created by the project, including the financial incentives for the application of EE measures in buildings, will stimulate large-scale replication nationwide. The results and lessons of the demo projects will be disseminated widely. Moreover, provincial Department of Construction staff will be consulted closely and will also benefit from the training provided by the project. The tools and systems put in place by the project will contribute to widespread replication in other cities in Viet Nam.

A.2. Stakeholders:

The project will involve all concerned stakeholders, including the Department of Science, Technology and Environment of the MOC, MOC's Centers for Energy Efficiency in Buildings (CEEBs) in Hanoi and HCMC, Hanoi University of Architecture, provincial governments and local authorities in the municipal sector, institutions and MOC's Groups and Corporations. The private sector, notably constructors, building designers, practitioners, building owners and equipment suppliers will also play an important role in improving the energy performance of new and existing buildings and transforming the buildings market. The project is not expected to be directly relevant to women or indigenous people.

Stakeholders	Role
Ministry of Construction (MOC)	Executing agency and key central government proponent for EE in buildings, including commercial and high-rise residential buildings. Responsible for managing and operating day-to-day project implementation.
Ministry of Industry and Trade (MOIT)	Associate implementing partner involved in developing policies, standards and regulations. MOIT regulates electricity retail prices and will play an important role in rationalizing electricity tariffs. MOIT will also provide technical advice, co-develop and review activities related to training, certification system for energy auditors and energy managers in the building sector.
Ministry of Finance (MOF)	Associate implementing partner involved in co-development of incentive/penalty scheme(s), mechanisms to support EE in the building sector
Ministry of Science and Technology (MOST)	Participating agency involved in developing policies and providing technical advice on EE standards for energy-intensive equipment in buildings, and provision of technology transfer.
CEEBs (Hanoi University of Architecture, HCMC University of Architecture) and National University of Civil Engineering,	These universities and institutes will be involved in the development of a database, technical training for energy managers, energy auditors, and research and development on EE in buildings. They will also benefit from training and workshops.

Institutes belonging to the MOC including Institute of Building Science and Technology, Vietnam Institute for Building Materials, Vietnam Institute of Architecture and Urban and Rural Planning Institute of Construction Economics	
Local Governments and Local Authorities (Provincial and District Departments of Construction-DOC and Departments of Urban Planning-DUPA)	Local agencies responsible for monitoring EE compliance during and after the construction phase and reviewing EE compliance against previously defined zone restrictions for new development, urban development plans, and environmental ordinances who will be involved in and benefit from capacity building on integration of EE in project design, energy auditing and certification of EE compliance.
Groups and Corporations such as Housing and Urban Development Holdings (HUD), Song Da Holdings Corporation, Enterprises of the MOC, Local Department of Architecture Planning and Private Sector: Designers, Design Consultants, Building Sector Consultants	Co-financing of demonstration projects and design of new construction projects, who will participate in and benefit from capacity building, demonstration, technology application, training, workshops and seminars.
Viet Nam Green Building Council, Viet Nam Federation of Civil Engineering Association (VFCEA) and Viet Nam Architect Association (VAA)	NGOs that will play an active role in disseminating information and raising the awareness of different stakeholders on EE in buildings by using their current networks.
Technology/Equipment Suppliers	These are partners for promoting EE and training/workshops/seminar activities. Will also support project activities with their technology and equipment expertise through EE equipment exhibitions and by identifying demonstration opportunities.
Other stakeholders such as building owners, energy managers, tenants and occupants who directly pay for the energy consumed	Investment (co-financing) in EE technologies, materials and products that can reduce their energy costs
Energy Efficiency Service Providers and national ESCOs	Will serve as a catalyst for EE applications in the existing construction sector. EESPs and ESCOs will provide building owners with a set of EE services and co-financing for improving the EE of some building components and equipment. This is especially the case for major retrofitting.

A.3 Risk

Risk Description	Mitigation Measure	Level of Risk
Institutional and Operational Risks		

Lack of government commitment to energy efficiency	The government has taken significant steps to provide a policy and regulatory framework toward energy efficiency (EE) in the industrial and building sectors. In addition, by decision of the Prime Minister, it is mandatory to implement the National Target Program on Energy Efficiency and Conservation (2006-2010, 2011-2015), which includes a specific component related to EE in the construction and buildings sector.	Low
Lack of institutional capacity to implement and manage the project	<p>MOC's institutional and technical capacity and experience in EE projects will ensure sound management and implementation of the project. MOC has dedicated management staff and a number of full-time staff responsible for EE. Besides, MOC's research and academic institutions such as the Construction Science and Technology Institution, Construction Materials Institution and Urban and Rural Planning Institute have been involved in a number of energy conservation projects ranging from development of standards and technical guidelines on EE, energy audits, research, surveys, recommendations and implementation of EE techniques in buildings, and EE monitoring and evaluation, etc. The two CEEBs belonging to MOC have also been providing training and education for energy managers and energy auditors, developing training manuals for students, and implementing research and applications of EE equipment in building, etc.</p> <p>Since 2004, MOC has been involved in a number of key EE programs including a demand-side management (DSM) project with the deliverable of formulation and promulgation of the EE building code 2005. Critically, it participated in the formulation of the Energy Efficiency and Conservation Law which was passed on June 2010. Within the framework of VNEEP 2, MOC takes the lead in implementation of Component 5 (Energy Efficiency and Conservation in Building, with two main projects of Improving capacity on EE&C and conducting EE&C activities in building design and management and Develop pilot models and disseminate EE&C management activities in building operation).</p>	Medium
Climate Change Risk		
Over the past 50 years, the average temperature in Viet Nam has increased by 0.7°C and is expected to increase further, leading to increased demand for air conditioning, which could offset the energy savings achieved by the project.	In updating the EE building code, greater attention will be paid to expected climate change impacts, particularly higher temperatures. Measures such as advanced insulation techniques and passive solar design can reduce the expected increase in air conditioning loads. High-efficiency electric appliances, especially in commercial buildings, can also reduce the electricity demand for air conditioning. Furthermore, raising awareness among building occupants is important, as building users generally respond to a warmer climate by choosing options that increase cooling energy consumption rather than other means, such as insulation, shading or ventilation, which consume less energy. It is envisaged that there will be some public awareness activities under component 2 and that CEEB staff will engage in outreach and communications.	Medium

Market Risks		
Low electricity tariffs could serve as a disincentive to EE	Viet Nam Electricity, the state-owned utility, raised average electricity prices by five percent in December 2012, the second increase in less than six months. Under a regulation that took effect in June 2011, the utility is allowed to raise power prices every three months based on changes in fuel costs or exchange rates. Input costs, including prices for coal and gas, have risen. Nonetheless, electricity prices remain low in comparison to other regional countries. MOC and the CEEBs will coordinate with the utility and relevant government authorities to set the electricity tariff at a level that reflects the true cost.	Medium
The market response of building owners, developers and end-users may not be as swift as anticipated. The desired behavioral change may not happen effectively within the 5-year project period.	MOC will accelerate the implementation of activities related to the enforcement of the incentive / penalty scheme, as well those pertaining to raising public awareness of such policy tools. At the beginning of the implementation schedule, the project will develop an effective communications plan and organize a set of relevant promotional activities targeting these stakeholders. The project will implement EE measures in 200,000 m ² demonstrations that can be replicated and are economically appropriate. Case Studies will be drafted and the information will be shared with decision-makers. Finally, as a result of the promulgation of the EE&C Law (2010), the implementation of the EEBC is now strongly supported by a clear legal framework, not only by a decision of MOC as previously.	Medium
Technical /Technological Risk		
Some technology suppliers may bring in very new technologies that may not be suitable to the local market.	MOC will limit available technologies for demonstrations to those that have been tested in a similar market, especially technologies with actual energy savings performance data from building owners and developers. This is to ensure that the project will not be promoting “untested” technologies that may not be compatible with climatic conditions or demand-side energy utilization behavior (and culture) in Viet Nam, or perhaps, may pose unforeseen safety and environmental hazards. This will be done through the demo projects and EE technologies inventory.	Low

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

The project development team will consult with and involve the implementers of ongoing energy efficiency programs/projects and construction projects in Viet Nam, in the design and development of this proposed project. The aim is to develop complementarities and synergies, and avoid redundancies and overlaps. These projects include (i) National Targeted Program on Energy Efficiency and Conservation (NTP EE&C) - component 5 on Energy Efficiency and Conservation in buildings¹⁴; (ii) UNDP/GEF regional project, Barrier Removal to the Cost-Effective Development and Implementation of Energy Efficiency Standards and Labeling (BRESL)¹⁵; (iii) National Program on Technology

¹⁴ VNEEP’s overall energy savings target is 5-8% of total national energy consumption during 2011-15. Component 5 under VNEEP has two main sets of activities: organizing training courses on EE&C measures in buildings for provincial Department of Construction staff and applying EE&C measures in five selected pilot buildings. Since the bulk of the activities of Component 5 of this project will form part of the proposed GEF project (as baseline activities), the project development team will coordinate with the VNEEP owner/implementer in various aspects of the activities implementation such as in: (1) Design (e.g., modification or augmentation) of the baseline activities to facilitate GEBs; (2) Implementation of the baseline activities; (3) Budget allocations; (4) Monitoring of the activities and indicators; and, (5) Reporting of the results and impacts of the activities.

¹⁵ The objective of the regional BRESL initiative is to rapidly accelerate the adoption and implementation of energy standards and labels for appliances and equipment. Under the BRESL project, Viet Nam has introduced new minimum standards for air

Transfer (TT) – including R&D/TT on energy conservation and renewable energy managed by MOST¹⁶; (iv) WB/GEF/MOIT project, Viet Nam Clean Production and Energy Efficiency Project¹⁷; and, (v) UNEP/GEF/MONRE project, Phasing out incandescent lamps through market transformation in Viet Nam.¹⁸

The project will establish links with other relevant national programme of the construction sector, including Programme of Energy and Resources Efficiency and Conservation in Construction Activities during 2008-2015 and the Master Plan on Construction Material Development up to 2020 to identify the relevant activities that will build on their respective achievements. The project will also establish partnerships with other projects related to EE among the private sector (particularly those having indicated their interest in hosting demonstration projects). It will also coordinate with the relevant departments of MOC on their ongoing/planned activities in order to explore and take advantage of potential synergies and ensure complementarities with construction best practices.

The project will be developed in close cooperation with major stakeholders already identified as well as with the UNDP Office in Viet Nam and UNDP Asia-Pacific Regional Centre in Bangkok. The UNDP office in Viet Nam will be fully involved in the project design and implementation through its participation in various stakeholder and co-financing meetings. In addition UNDP Vietnam is already involved with the VNEEP 2 planning by attending all roundtables and workshops organized by MOIT for that purpose. With regards to other initiatives in the region, the project will promote learning and knowledge sharing at regional level and forge partnerships between Vietnamese entities and other country partners to replicate best practices and facilitate technology transfer.

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.:

The proposed project is consistent with the second priority identified in the GEF National Portfolio Formulation Exercise (NPFE) and is in line with the major national policies and programs on climate change, energy conservation and energy efficiency, environmental protection, and energy saving in the construction sector. According to Viet Nam's Second National Communication to the UNFCCC, the residential and commercial sectors are two of the fastest growing sources of GHG emissions in the country. Notably, end-use energy demand from the residential sector is projected to double over the next 20 years. The Second National Communication identifies six GHG mitigation options related to energy efficiency, including high-efficiency appliances, energy saving lamps, and solar water heaters, all of which would complement this initiative.

The Technology Needs Assessment identifies energy efficiency and saving as one of the key measures for GHG emission reduction. For the service and household sector, energy efficient lighting and energy

conditioners and will develop energy efficiency standards and labels for fluorescent tube ballast, fans, electric motors, refrigerators, CFLs and rice cookers. Coordination will be done in the potential incorporation in the EEBC of EE specifications in the selection and sizing of electricity consuming appliances/equipment in commercial and high-rise residential buildings.

¹⁶ For the National Program on Technology Transfer, any findings that are relevant to energy conservation in the buildings sector will be incorporated into the EEBC project.

¹⁷ The WB/GEF project, which started in October 2011, focuses mostly on promoting energy efficiency in the industrial sector. It has a component on the promotion of energy efficient household electrical appliances, such as air conditioners and refrigerators, which would complement the activities of this GEF project as this project focuses more on building materials and equipment.

¹⁸ This project will complement the UNEP/GEF project, which aims to phase out incandescent lamps and promote energy saving lamps, especially CFLs.

efficient cooling and air-conditioning are highlighted as technologies that can save energy and reduce GHG emissions. The project is in line with and will contribute to the implementation and achievements of the following key strategies and programs of Viet Nam:

- The National Climate Change Strategy NCCS (2011) gives priority to the energy efficiency actions. The Strategy requires to “develop and enforce regulations and standards of energy efficiency in material production and construction techniques and equipment”;
- The National Green Growth Strategy (GGS) which sets clear targets to reduce the intensity of GHG emission by 8 to 10% compared to 2010 base year; energy consumption per unit of GDP by 1 to 1.5% per year; GHG emission from energy activities by 10% to 20% compared to Business As Usual, and aims to restructure the economy through improving efficient uses of resources and energy, limiting development of economic sectors that have major negative impacts on environment, promoting the development of new green production sectors, while improving productivity and competitiveness;
- Viet Nam National Energy Efficiency Program (VNEEP 2) Phase II (2011-2015), which includes investments and targets for reducing energy consumption of the whole economy by 5-8% by 2015;
- The Law on Construction (2003) which requires all construction works include EE solutions and to maximize advantage and minimize disadvantages of natural conditions to ensure energy saving;
- The Law on Energy Efficiency and Energy Conservation (EE&C) (2011), which stipulates priority to application of EE&C solutions in designing, building construction works;
- The Energy Efficiency Building Code (EEBC) issued by the Ministry of Construction (2005), which provides technical requirements and solutions applied in the design and construction of buildings;
- The Law on Environmental Protection (2005), Article 84, point 3 on Management of GHG’s and ozone layer-depleting gases: the State encourages production, business and service establishments to minimize GHG emissions;
- Law on Technology Transfer approved by the National Assembly on 29 November 2006;
- The Master Plan on Construction Material Development up to Year 2020 (2008);
- Master Plan of Construction Material Development up to 2020 (2008).

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

The project is aligned with Objective 2 of the climate change mitigation focal area on Promoting market transformation for energy efficiency in industry and the building sector, and will contribute to the reduction of greenhouse gas emissions through the transformation of the construction and building sector towards greater energy efficiency and energy conservation.

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

In Viet Nam, UNDP is among leading development partners to build capacity and provide technical advice to the government to respond to climate change and protect the environment. UNDP has advised the government and provided technical inputs, including sectoral studies for the formulation of the national climate change strategy (2011), Viet Nam green growth strategy (2012), law on energy efficiency and energy conservation (2011), the law on environmental protection and a number of programs and plans. In recent years UNDP Viet Nam has actively supported the government in strengthening its capacity to participate in international climate negotiations.

UNDP is among key development partners who have pioneered the promotion of energy efficiency and energy conservation in Viet Nam. UNDP focused on capacity building and technology transfer through the implementation of two full-sized GEF projects: Promoting Energy Conservation in Small and Medium Enterprises in Viet Nam (PECSME) and Viet Nam Energy Efficient Public Lighting (VEEPL) and a component of a regional GEF project entitled “Asia: Barrier Removal to the Cost-Effective Development and Implementation of Energy Efficiency Standards and Labeling (BRESL). These three

project results have been catalytic in transferring low cost energy conservation technologies and best management practices to private, public businesses and SMEs in Viet Nam, including SMEs in the brick sector. The projects also illustrate how well UNDP coordinates partnerships across public and private sectors, including the involvement of commercial banks/financial institutions in energy conservation and energy efficiency related activities.

UNDP has extensive experience in providing technical assistance oriented activities and other capacity building initiatives to help improve local government capabilities and the enabling environment for implementing climate change, environmental and sustainable energy programs in Viet Nam. It is well positioned to work with and advise the Government of Viet Nam on policy, strategy and best approaches to meet serious climate change, environmental and energy challenges based on its respective comparative advantage. UNDP has also developed strong partnerships with various institutions, including ministries, businesses, banking institutions, and local authorities. Such strong and growing partnerships will help deliver the project results successfully.

Globally, one of UNDP's signature programs is on low carbon urban infrastructure. A major emphasis of this program is on promoting energy efficiency in buildings. Over the past two decades, UNDP has accumulated a wealth of technical and programmatic experience in this subject area. UNDP has a large EE building portfolio, comprising 43 projects across 35 countries. In the Asia-Pacific region, UNDP has experience in implementing similar GEF-assisted projects on energy efficiency in the building sector, notably in China, India, Thailand, Malaysia, Mongolia, Iran and Pakistan.

To ensure the success of project implementation, the UNDP Country Office team in Viet Nam will involve various stakeholders and co-financing partners during the formulation and implementation of the project through consultation meetings, technical workshops, and contractual agreements. In addition, project implementation will be overseen and technically assisted by the UNDP-GEF Asia-Pacific Regional Centre in Bangkok (UNDP-GEF APRC).

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)
Dr. Van Tai Nguyen	Director General	Ministry of Natural Resources & Environment	02/04/2013

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 Officer-in-Charge		April 10, 2013	Faris Khader Regional Technical Advisor EITT	+66 2304 9100 ext 2756	faris.khader@undp.org