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**Evaluation of UNDP/GEF Project: Vietnam – Promoting Energy
Conservation in Small and Medium Scale Enterprises**
(PIMS 2057)

Mid-Term Evaluation Report

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ABBREVIATIONS

Acronym	Meaning
ADB	Asian Development Bank
APEC	Asia Pacific Economic Cooperation forum
ASEAN	Association of Southeast Asian Nations
Asia-BRESL	Asia: Barrier Removal to Cost Effective Energy Efficiency Standards & Labeling
AWP	Annual Work Plan
CLASP	Collaborative Standards and Labeling Program
CER	Certified Emission Reductions
DOIs	Departments of Industry in Provinces
DOSTs	Departments of Science and Technology in Provinces
DPD	Deputy Project Director
DSM	Demand Side Management
ECCs	Energy Conservation Centers (Hanoi, Haiphong, Danang, Cantho & HCMC)
EC&EE	Energy Conservation and Energy Efficiency
EESPs	Energy Efficiency Service Provision/Providers
ELI	Efficient Lighting Initiative
EPC	Energy Performance Contract
GEF	Global Environmental Facility
GHG	Greenhouse Gases
GoV	Government of Vietnam
HCMC	Ho Chi Minh City
HUT	Hanoi University of Technology
IE	Institute of Energy (MOI)
IFC	International Finance Corporation (of the World Bank Group)
IHER	Institute of Heat Engineering and Refrigeration (HUT)
INCOMBANK	Industrial and Commercial Bank of Vietnam
KWh	Kilowatt-hours
LGF	Loan Guarantee Fund
LPG	Liquefied Petroleum Gas
MDG	Millennium Development Goals
MEPS	Minimum Energy Performance Standards
MoC	Ministry of Construction
MoF	Ministry of Finance
MoIT	Ministry of Industry and Trade
MoNRE	Ministry of Natural Resources and Environment
MoPI	Ministry of Planning and Investment
MoST	Ministry of Science and Technology (since 2003)
MoSTE	Ministry of Science, Technology and Environment (pre-2003)
MTE	Mid-Term Evaluation
NGOs	Non Government Organizations
NPD	National Project Director
NPM	National Project Manager
PDF-B	Project Development Fund – Block B
PECSME	Promoting Energy Conservation in Small and Medium Scale Enterprises (in

Acronym	Meaning
	Vietnam)
PIR	Project Implementation Report
PM	Project Manager
PMU	Project Management Unit
SDC	Swiss Agency for Development Cooperation
SMEs	Small and Medium Enterprises
SMEDD	SME Development Department
SMEPC	SME Promotion Council
SOEs	State Owned Enterprises
TOE	Tonnes of Oil Equivalent
TCE	Tonnes of Coal Equivalent
TOR	Terms of Reference
TTCs	Technology Transfer Centers (located in provincial centers)
UNDP	United Nations Development Programme
UN-ESCAP	UN Economic and Social Commission for Asia and the Pacific
VCA	Vietnam Cooperative Association – formerly VICOOPSME
VCCI	Vietnam Chamber for Commerce and Industry
VECP	Vietnam Energy Conservation Program
VEEPL	Vietnam Energy Efficient Public Lighting
VietinBank	Vietnam Bank for Industry and Trade (formerly INCOMBANK)
VNCPC	Vietnam Cleaner Production Centre
VNEEP	Vietnam National Energy Efficiency Program
VSBK	Vertical Shaft Brick Kiln
WB	World Bank
WU	Women Union

EXECUTIVE SUMMARY

The project document for PECSME was signed in October 2005. PECSME commenced operations in January 2006 with the Inception Mission and workshop. The main driver for PECSME was the need to realize energy savings for the SME industrial sector in Vietnam that accounts for over 95% of all enterprises, 26% of all employment and 25% of the country's GDP.

The project development **goal** is to reduce the annual growth rate of GHG emissions through the removal of key barriers to the adoption of more energy efficient technologies and energy efficient practices in the SME sector.

To achieve this goal, the Project was designed with a number of expected **project outcomes**:

- Outcome 1: Improved EE&EC awareness and improved capacity for EE&EC policy development that would increase the impact of existing policies and recently enacted EE&EC decree through strengthened relevant ministries, departments and agencies of the Government of Vietnam;
- Outcome 2: Adoption of a communications strategy to enhance SME and public awareness of EE&EC through an integrated communications system including information collection, dissemination and reporting;
- Outcome 3: Enhanced EE&EC capacity that has been developed through a comprehensive training plan that improves technical and financial skills;
- Outcome 4: High quality and sustainable energy services available in Vietnam through development of technical support for EE&EC professionals;
- Outcome 5: Improved understanding of the banking and financial sector of the benefits of EE&EC investments to the extent that they would be willing to finance SMEs through loan guarantees;
- Outcome 6: Full operational demonstration projects that increase the credibility of EE&EC investments and improve the probabilities of replication.

Context and Purpose of the Mid-Term Evaluation

The purpose of the MTE for this Project is to evaluate the progress towards the attainment of global environmental objectives, project objectives and outcomes, capture lessons learned and suggest recommendations on major improvements. The MTE is to serve as an agent of change and play a critical role in supporting accountability. As such, the MTE will serve to:

- Strengthen the adaptive management and monitoring functions of the Project;
- Enhance the likelihood of achievement of Project and GEF objectives through analyzing project strengths and weaknesses and suggesting measures for improvement;
- Enhance organizational and development learning;
- Enable informed decision-making;

- Create the basis for replication of successful project outcomes achieved to date;
- Identify/validate proposed changes to the Project Document to ensure achievement of all project objectives; and
- Assess whether it is possible to achieve the objectives in the given timeframe, taking into consideration the speed, at which the project is proceeding.

Evaluation Findings

Main **achievements** of the project as of September 2008 have been:

- Cumulative reduction up to September 2008 from EC projects implemented: 84.0 ktonnes CO₂ or 8.7% of the cumulative 962.0 ktonnes targeted by the end of the Project;
- Cumulative reduction up to September 2008 from EC projects implemented: 22.0 kTOE of energy consumption in comparison to the cumulative target of 136.1 kTOE by the end of the Project;
- Project involvement with drafting of energy conservation laws and policies that promote EC&EE investments; these should provide the basis for increased SME involvement in EC activities in Vietnam. The Draft Law of Energy Conservation and Efficient Use is designed to encourage intensive energy end-users to appropriately manage the energy consumption and report the impact of the EC measures to GoV. The draft EC law provides policies, incentive measures, and solutions for managing energy conservation of energy-end users (including SMEs) and rational use of renewable energy sources. Passing of the law is anticipated in 2009 or 2010;
- Successful setup of supporting information networks with DoST for SMEs and energy service providers (EESPs) in 20 out of 64 provinces in Vietnam. This includes:
 - appointment of provincial coordinators who manage the overall EC program under DoST and to assist them in setting sectoral priorities to pursue with SMEs;
 - the setup of 20 provincially administered “Energy Conservation Centers”/“Technology Transfer Centers” (ECCs/TTCs) with personnel to identify EC opportunities for SMEs within a particular provincial area;
 - the emergence of individual persons who are energy efficiency service providers (EESPs) in various provincial centers who specialize in providing technical assistance to SMEs for EC initiatives. In larger centers, some of these EESPs have formed or are operating energy service companies (ESCOs) that are providing EC services to larger companies and SMEs.
- Delivery of training programs for EESPs and SMEs on planning, designing, financing and implementing EC projects. These have been delivered as planned to improve their knowledge base of EC issues for priority SME industrial sectors;

- Delivery of energy services by PECSME-trained EESPs to SMEs and lending institutions. Services have been delivered to SMEs to assess feasibility of EC projects and conduct energy audits, and to lending institutions for the preparation of feasibility studies;
- Setup of an operational loan guarantee fund for SMEs to raise financing for EC&EE projects. SMEs now have access to loan finance through commercial banks (Vietinbank) or government funds (VEPF) that are 75% guaranteed by the Project's Loan Guarantee Fund (LGF);
- Setup of demonstration projects for SMEs in the ceramic, brick, textile, food processing and pulp and paper sectors. These were all completed in 2007 although to varying degrees of success.

The most important **conclusions** drawn from the mid-term evaluation (MTE) mission include:

- There are a number of incentive-based laws, policies and government incentive programs that serve as good starting points to accelerate SME adoption of EC measures. This includes 30% subsidies in some provinces for VSBKs from the Local Science and Technology Fund, concessional borrowing rates and tax exemptions;
- Replication of demonstration projects has had varying degrees of success. This is mainly due to the nature of the EC measures proposed, and to some extent, the inherent protective nature of the sector possibly related to proprietary or taxation issues. The actual replication of the demonstration projects for each sector indicates that EC adoption (or transformation) for each sector will be achieved through differing approaches. This includes self-sustaining transformation or demand driven (as is the case for the ceramic and brick sectors) to government promotion of EC measures (as is the case with textiles sector);
- The limited number of qualified EESPs in Vietnam will limit the number of new SME-EC projects per year. To increase the rate of rapid adoption of EC measures by SMEs, the pool of qualified EESPs will need to grow. Moreover, the new EESPs will need to be substantially competent with technical and financial issues related to EC financing and implementation in the 5 industrial sectors under PECSME;
- Many of the EESPs will be working with new and upcoming ESCO business model. These ESCOs currently and will employ persons familiar with EC work; they are generally from the ECCs and various technical institutes such as Hanoi University of Technology (HUT). The Government of Vietnam (GoV) has strategies to migrate state employees from government positions (such as the provincial ECCs/TTCs) to the private sector (i.e. ESCOs). The transition from a public sector to private sector working environment, however, can be difficult. To increase the chances of these ESCOs to succeed in the private sector, assistance to these nascent ESCOs should be provided in the areas of business development and management;

- The PMU has performed at a high level in implementing the Project. The evaluator has also observed that senior PMU management work extremely hard to meet reporting deadlines and project targets; however, their work loads reduce their valuable time to strategize or plan for future activities. With increasing work loads anticipated for the remaining period of PECSME, the PMU are in need of measures to reduce their work load. This would include more sophisticated tools to track progress, notably for replication projects which are scattered throughout Vietnam;
- The Project log-frame requires revisions to reflect ongoing GEF migration towards outcome or impact reporting. The current version of the log-frame is basically an action plan with the key indicators, and needs revision to reflect intended outcomes of each activity that conform with general GEF formats for log-frames. Moreover, some activities will need to be removed as they are basic evaluation activities of the various components.

Performance Ratings

The overall rating of the project in terms of project progress is “Satisfactory” (S), mainly due to the attainment of a number of targets set in the Project Document with a need for adjustments to various design and implementation issues. A summary of ratings for the individual components are provided in Table A in this document.

Project **sustainability is moderately likely** given the current policies in place, the information sharing network, ongoing training, SME financing and the setup of demonstration projects, but with the need to confirm that finances will be in place to continue Project activities after the completion of PECSME. Moreover, PECSME sustainability can be enhanced:

- if there is a clear vision of the post-PECSME scenario including:
 - the use of LGF funds after PECSME is complete. There is currently no commitment from Vietinbank or the GoV on the existence of the LGF after PECSME is completed. As such, questions will linger as what financial instrument will be available to SMEs to finance EC initiatives after PECSME is completed;
 - other financial instruments that can be mobilized for EC activities such as CDM funds for the brick and ceramic sectors;
- through a focused training program (to be implemented between now and the end of PECSME) to address the needs of EESPs and ESCOs after the project is completed. The content of the training program will need to be guided by the aforementioned vision of the post-PECSME scenario, and would likely include business training and specialized technical topics (eg. boilers, ceramic ovens and brick kilns) for ESCO personnel who are from existing ESCOs or technological institutes.

Table A: Evaluation of Project Activities and Outputs (as of September 2008)¹

Project Outcome	Relevance	Efficiency	Effective-ness	Results / Impacts	Overall Rating	Sustain-ability
Outcome 1: Improved EC&EE policy and Institutional capacity	HS	HS	HS	HS	HS	L
Outcome 2: Enhanced SME and public awareness of EC&EE	HS	HS	HS	HS	HS	ML
Outcome 3: SME and EESP capacity has been enhanced to implement EE&EC projects.	HS	HS	S	S	S	ML
Outcome 4: Growth of competitive and sustainable EE services provision industry through enhanced business, engineering and financial skills of EESPs	HS	S	S	S	S	ML
Outcome 5: Increase financial system willingness to lend to SME for EC&EE Projects through enhanced knowledge of EC and skills in evaluating loan application	HS	S	S	S	S	ML
Outcome 6: Increased credibility of EC&EE through successfully implemented and evaluated demonstration projects	HS	HS	S	S	S	ML
Monitoring and Evaluation	HS	S	S	HS	S	
Overall Rating					S	ML

¹ *Highly Satisfactory (HS)*: The project has no shortcomings in the achievement of its objectives; *Satisfactory (S)*: The project has minor shortcomings in the achievement of its objectives; *Moderately Satisfactory (MS)*: The project has moderate shortcomings in the achievement of its objectives; *Moderately Unsatisfactory (MU)*: The project has significant shortcomings in the achievement of its objectives; *Unsatisfactory (U)*: The project has major shortcomings in the achievement of its objectives; *Highly Unsatisfactory (HU)*: The project has severe shortcomings in the achievement of its objectives.

Replication of EC measures will be sustained if:

- there is sufficient demand by the SMEs; energy savings would be substantial, and the new technologies would provide improved productivity, improved quality of final products and increased profitability. This has been most evident in the brick and ceramic sectors;
- EC opportunities are presented in a coherent manner to SMEs by ECCs/TTCs. ECCs and EESPs need to work in close consultation with SMEs to efficiently present clear solutions and benefits, especially in the textile, food processing and pulp and paper sectors;
- there is growth in the number of qualified EESPs to develop the EC opportunity.

Recommendations

The following recommendations are provided in an approximate order of importance to the project:

Recommendation 1: The Project should resolve issues to ensure there are loan guarantees for SMEs after the completion of the project. Currently, there appear to be two courses of action for PECSME:

- Work with the relevant government agencies (MoST, MoPI and MoF) on their commitment to have the LGF continue to serve as the loan guarantor. In a post-project scenario, MoST would replace PECSME in the administration of the LGF applications and provide the necessary technical assistance; and
- Work with relevant government agencies at the provincial level on commencing a pilot “Energy Performance Contract” (EPC)². At least to the knowledge of the Evaluator, the EPC business model is unique in Vietnam and is a means of spreading risk to both the financial lending institute and a competent ESCO. PECSME can provide technical assistance or the initial capital towards setup of the pilot scheme using a portion of available LGF funds (roughly US\$250,000).

By implementing one or both courses of action, a basis can be established on which to provide more focused capacity building programs for the remainder of PECSME. Assuming PECSME implements either or both courses of action, PECSME will need to provide technical assistance and capacity building support as described in Recommendation 2.

Recommendation 2: Revise PECSME training approach to assist EESPs to adapt to the envisioned post-project business environment scenario. Using the limited PECSME budget available, PECSMEs training approach should be adjusted to respond to the needs of the post-project business environment. Since most EESPs are now

² An energy performance contract is undertaken by an ESCO to implement EC measures for an SME, in return for monthly payments from the SME based on energy saved. ESCO funding to undertake EC measures comes from an open guarantee from a commercial bank such as Vietinbank or from the VEPF (soft loan). To lower the financial risk and maximize efficiency of the program in terms of implementing EC projects, the maximum payback period for an SME is 2 years, preferably 12 to 18 months.

competent “generalists” in the area of energy conservation, they are only able to provide a certain level of service to most SMEs and financial institutions/fund managers. For these EESPs to evolve to a higher level of competence and to increase their marketability, the training approach will need to foster the development of “champions”, from both a technical and business perspective. As such, the revised training approaches:

- should incorporate more specialization and improving EESP skills to provide improved services to the financial sector. Suggested areas of specialization includes thermal engineering for boilers, thermal engineering for bricks and ceramics, energy efficient lighting, and financing;
- will need to determine locations of where certain sectoral skills are required. For example, Binh Duong Province is a logical choice for developing a brick EESP champion;
- will need to identify individuals who can become champions in each sector:
 - the ceramic sector in Bat Trang already has a qualified candidate for development into a ceramics champion;
 - the brick sector already has two qualified candidates for becoming brick champions;
 - for the textile, pulp and paper and food processing sectors, there are capable EESPs currently functioning as private ESCOs within these sectors in the HCMC area for EC technical assistance only.

If a pilot EPC is implemented, PECSME should:

- develop the EPC pilot scheme through these “champions” wherever possible or appropriate. This can lead to the outcome of an effective demonstration of a new EC business model in Vietnam that can be replicated by newcomers or ECCs shifting from SoE entities to a private sector company;
- continue to provide training that accelerates market transformation of EC services with other EESPs, including the aforementioned training approaches towards specialization;
- provide advanced business training to selected ESCOs related to formulation and execution of EPCs; and
- provide technical assistance that strengthens the institutional and legal framework of EPCs with a model that reduces risks for the lending institution and the ESCO. For the purpose of pilot EPC, this would include assignment of liabilities to the ESCO as borrower and the LGF as major risk taker.

Recommendation 3: Provide additional support to promote demonstration projects in the textile, food processing and pulp and paper sectors. The demonstration projects of these sectors has not resulted in larger-scale replication. Additional support to ECCs/TTCs and provincial DoST coordinators will be required for awareness and technical assistance to promote EC in these sectors. In some cases such as the textile sector, working through the appropriate industry association could be a vehicle for promoting EC projects. If the industry association and government officials jointly conduct promotional and TA work, technology adoption would be more effective as a stronger message would be conveyed to SMEs on the importance of EC measures in Vietnam.

Another solution is to implement an EPC (see Recommendation 1) for EC investments in the textile, food processing and pulp & paper industrial sectors; these sectors are, as a rule, not cost-intensive, and would have a short payback period if implemented through an EPC.;

Recommendation 4: Amend conditions for obtaining loan guarantees from the LGF by:

- Guaranteeing 100% of the requested loan covered by the LGF. Current conditions for SMEs applying for a loan guarantee from the LGF include the SME having to raise their own collateral equivalent to 25% of the requested loan amount. If this condition was waived, an outcome of more SMEs requesting loans through the LGF is more likely. Moreover, the risks of waiving this condition are offset by the fact that there are currently no repayment issues of loans approved against the LGF, as indicated by Project records. In addition, the LGF will likely receive more requests for loan guarantees from the brick and ceramic sectors; these sectors are under better financial condition than the textile and pulp and paper sectors;
- raise the LGF ceiling from 2.0 billion VND to 5 billion VND. Rationale for this recommendation comes from the rising costs of EC projects over the last 2 years, and the need to include larger projects in the LGF portfolio; and
- transfer US\$250,000 from the LGF to provide additional training or knowledge transfers for EESPs and SMEs on the LGF and other financial issues related to EC implementation. This is being presented as a means to support of Recommendation 2 for additional training support on LGF financing issues, and responds to several concerns amongst stakeholders, especially Vietinbank, of the need for improved understanding amongst SMEs of this financial instrument. The risk of decreasing the LGF by US\$250,000 is low given that the LGF will still be able to cover an equivalent of 80 replication projects (assuming an average replication project cost of US\$43,000). The transferred budget provision will be useful to additional activities such as training in the preparation of bankable documents, introducing a new business model such as the EPC approach and project bundling in the brick making and ceramic sectors under carbon trade programs managed by the World Bank and other multi-lateral organizations.

Recommendation 5: Facilitate preparations for a CDM project in the ceramic and brick sectors. The Project is in a unique situation to facilitate the formation of an entity or selection of an existing entity to prepare and manage a CDM project. With the Project's technical knowledge of these sectors, its stakeholder network and its linkages to multilateral assistance for soft support, an effort should be made to ensure CDM revenue can support the continuation of market transformation in the brick and ceramics sectors. Preparations can include:

- determining baseline and appropriate CDM methodology to estimate CER generation;

- institutional arrangements for designing, monitoring and managing the CDM project and distributing CDM revenue streams;
- determining PECSMEs role in facilitating CDM preparations.

Recommendation 6: Re-assess methodology used to calculate electricity-based GHG emission reductions through the use of “marginal grid emission factors”.

Current estimation methods used by the Project for grid emissions is based on a grid emissions factor that is averaged, notwithstanding the different energy sources used during different times during the day. The use of a marginal emissions grid factor will provide a more precise determination of the actual grid emissions at a particular time of day based on generation sources. PECSME at this time is likely underreporting GHG emissions from its activities.

An example of the differences between GHG reporting using the average and marginal emission factors would be the use of efficient lighting in the food processing and textile sectors. With the efficient lighting used during the daytime operations, GHG savings are estimated using an average grid factor of 0.43 kg CO₂/kWh or the average of daytime generation (being a combination of hydro and fossil fuels) and nighttime generation (hydro only). A more realistic GHG reduction would account for the daytime grid emissions factor of more than 0.6 kg CO₂/kWh based on reduction of grid power consumption from fossil fuels.

Recommendation 7: PECSME will need to invest some resources to improve efficiencies in project monitoring.

The aim of this recommendation is to reduce the workload of the PMU to the extent that they can focus on adaptively managing the project. This recommendation also makes the assumption that the workload during the second half of PECSME will increase; any increase in PECSME workload will result in an increased risk that the PMU cannot manage the project in a manner similar to its past high performance. Specifics of this recommendation include:

- an assessment of how to setup an information management system that can be queried for project progress, and produce progress reports efficiently for PMU reporting requirements as already outlined in the M&E Guidelines issued in May by the PMU in 2008;
- discussions with PMU staff and other users of the database as to the design of the database structure (using the current Excel spreadsheet). The design should ensure ease and relevance of data entry, relevant query functions, and reporting formats;
- ensure database design compatibility with database software. The software platform is likely to be Microsoft Access and its compatibility with other Microsoft software; and
- training for PMU staff on the use of the information management system, related software and best practices of continuous monitoring and evaluation.

Recommendation 8: Reset log-frame targets and outcomes to reflect relevant and realistic targets. Some of the success indicators or targets in the original log-frame are not attainable or have become irrelevant from changes in the work plans. These targets

were set in 2004 under a different environment, and with considerably less information than is currently available on the Project today. Furthermore, the log-frame is written in terms of work plan strategies and not outcomes as is the case with many other GEF project log-frames.

As such, the log-frame success indicators need to be updated and strategies of the log-frame converted to intended outcomes of PECSME. Examples of specific target and outcomes that require review or have been reviewed include:

- cumulative GHG reductions and energy savings for the entire project. GHG savings for example, were lower for all sectors except for the brick sector;
- the 500 energy audits and/or feasibility studies to be completed by the end of the Project. This may need to be reduced since there are insufficient resources to complete 500 audits/studies;
- 60 and 80 replication projects financed by the Vietinbank Loan Program and other additional funds respectively. Combining these numbers into one target is recommended;
- an outcome of developing EE&EC training programs for colleges and universities. The PMU have recommended removal of this outcome;
- evaluation activities of each assessment that have their own success indicators. These should be removed as they are project activities and not outcomes of the project.

If the PMU feels the targets are not attainable, the target numbers should be reset. The Evaluator has also provided suggested “outcomes” to replace “strategies” in the original log-frame. These can be found on in the Evaluation Report on Table 1 in the main report.

1. INTRODUCTION

This report summarizes the findings of the Mid-Term Evaluation Mission conducted during September 2008 for “Promoting Energy Conservation in Small and Medium Enterprises” (herein referred to as the “Project”) implemented by the United Nations Development Program (UNDP), PIMS 2057 and with financing support provided by the Global Environment Facility (GEF). The Project Document (Prodoc) provides details to remove key barriers to energy conservation and energy efficiency within small and medium industrial enterprises in Vietnam. The Prodoc was signed in October 2005 but only started field operations in January 2006 with the Inception workshop. The project is expected to have a 5-year duration with the completion date of October 2010.

1.1 Background

1.1.1 Overview of Vietnam’s Energy Sector

Vietnam’s economy has demonstrated steady growth since the 1990s with current GDP growth of 7% for 2008³. With this steady growth, energy demand has been growing at a rate of 8% per year with electricity demand growing at 16% in 2008 from 2007 consumption rates. Fueling Vietnam’s economic growth has been its adoption from a centrally planned to market-based economy. As a result, the private sector has become an increasingly significant portion of Vietnam’s economy. This includes more than 25% from small to medium enterprises contributing to Vietnam’s GDP. Private sector investment has also been capitalizing on the GoVs market orientation in energy policy and pricing, and in particular, investments in its electricity market.

Vietnam’s primary energy supply in 2005 was equivalent to 41,296 kTOE or 2.15 million TJ⁴. The fossil fuel proportion of the energy supply consisted of 15.8% coal (or 11 million tonnes of coal), 24.3% oil (or 12,465 kTOE) and 9.6% gas (or 4,924 kTOE). In 2005, Vietnam produced 53,463 GWh of electricity of which 40% was from hydro, 39% from natural gas/LPG, 4% from oil and 17% from coal (or 3.8 million tonnes of coal). Out of the 53,463 GWh, industry consumed close to 50% of this energy.

While Vietnam is currently self-sufficient overall in energy, growth in electricity demand is expected to increase to 83-96,000 GWh/yr by 2010 and possibly to 200-250,000 GWh/yr by 2020 unless domestic generation sources can be developed. While Vietnam has high quality and cost-competitive indigenous energy resources (coal, hydro electricity, oil, LPG, natural gas, fuel wood and crop residues), these resources are generally struggling to keep up with the rising domestic energy demand. Recent energy investments have kept power generation close to demand. However, more investments are needed (close to about 5% of GDP annually) to maintain the country’s targeted economic growth of 8%. If not, Vietnam after 2015 could become a net energy importer placing pressure on Vietnam’s balance of trade.

In Vietnam, there has been a steady transition to market oriented energy pricing. International markets now determine the price of oil products and LPG in Vietnam. Vietnam’s

³ <http://www.baovietnam.vn/xa-hoi/94988/20/Khai-mac-ky-hop-thu-4-Quoc-hoi-khoa-XII-GDP-dat-6,52-phan-tram-la-dang-khich-le>

⁴ From the International Energy Agency country data for Vietnam, http://www.iea.org/Textbase/country/n_country.asp?COUNTRY_CODE=VN

high-grade crude oil is exported and lower grade refined products are imported although this will change with the completion of Vietnam's first oil refinery in 2009 in Ho Chi Minh City. For electricity, commercial and industrial tariffs already contain multiple steps that partly reflect peak demand constraints. Time-of-use meters and tariffs have been introduced for selected large consumers. The Government of Vietnam (GOV) has decided to steadily increase electricity tariffs step-by-step by up to 30% to cover the full marginal cost of the significant new generation, transmission and distribution capacity required. This rise in electricity prices will make energy conservation and energy efficiency (EC&EE) investments more profitable.

In 2003, Vietnam's energy sector accounted for about 61 million tonnes of CO₂ emissions⁵ and was the main contributor to Vietnam's overall GHG emissions⁶ of 106 million tonnes CO₂. This trend is expected to continue to 2010 when 117 out of 148 Million tonnes of CO₂ equivalent emissions are expected to come from the energy sector, and by 2020 the energy sector contribution is expected to be 232 Million tonnes out of a total of 267 Million tonnes of CO₂ emissions.

1.1.2 Development of the SME Sector in Vietnam and Energy Conservation

In Vietnam's drive towards a market economy, SMEs have and will play a significant role in future employment growth instead of state owned enterprises (SoEs). SMEs in Vietnam are defined as "independent enterprises with less than 10 Billion Dong in paid-up capital or fewer than 300 employees"⁷ (equivalent to USD 650,000 in 2003). Since 1986, the SME sector experienced extensive growth when the GoV promulgated several policies and legislative measures to encourage the diversification of enterprise styles and increase the size of non-state enterprises. The outcome of these measures has been:

- a two to three-fold increase of new SMEs to the current 120,000 registered SMEs in Vietnam;
- a 25% contribution by SMEs to Vietnam's economy; and
- SMEs employing 26% of the country's workforce⁸.

As such, Vietnam's SME sector consumed a significant proportion of the country's energy resources with increases in consumption expected with the growth of the SME sector. Growth of the SME sector will create employment and advance workforce skills. While this works towards economic development and achievement of Millennium Development Goals (MDG) (i.e. poverty alleviation, social development, and gender participation), achievement of these MDG goals is threatened by the widespread use of old technologies, poor management practices, lack of staff skills in efficient operation of energy consuming equipment, and inadequate investment in modern equipment. This is the key driver of the PECSME project that has been designed to as an integrated barrier removal program.

There are three SME energy-related issues that provide rationale for PECSME:

⁵ <http://www.iaea.org/inisnkm/nkm/aws/eedrb/data/VN-enem.html>

⁶ According to the GHG emissions inventory by MONRE – the Ministry of Natural Resources and Environment

⁷ According to the Government Decree No 90 on SME Development Promotion Around US\$ 650,000 in 2003

⁸ Ministry of Planning and Investment (MPI) data

- Rising electricity costs. For SMEs, electricity use is typically between 35 and 50% of an SMEs operating cost. With the projected rising costs for electricity to fund major electricity infrastructure investments, competitiveness of the entire SME sector will be compromised affecting the ability of the SME sector to contribute to MDG goals;
- Exposure of SMEs to price variations of imported fuels. Liquid Propane Gas (LPG) is one of these imported fuels that is commonly used in the SME sector. With Vietnam now importing more than 30% of its LPG, the fuel is now subject to international prices which have risen 35% in 2003 and 148 % since 2003. With these rising prices, efforts to efficiently use this fuel within the SME sector would be beneficial for the SME sector and the balance of payments for Vietnam;
- Supply constraints for various domestic fuel sources. SMEs have been experiencing in limited supplies of fuel wood and coal resulting in rising prices. The outcome of these supply constraints has been the increased import of LPG; relocation of polluting industries to outside cities (to be closer to fuel sources and in areas with more lax enforcement of pollution regulations); limitations of pipeline infrastructure to distribute indigenous natural gas to SMEs (now only available in South Vietnam); and a rapidly emerging need to transfer practices of energy efficiency and efficient use of traditional and domestically available fuels (e.g., rice husks in the Mekong Delta).

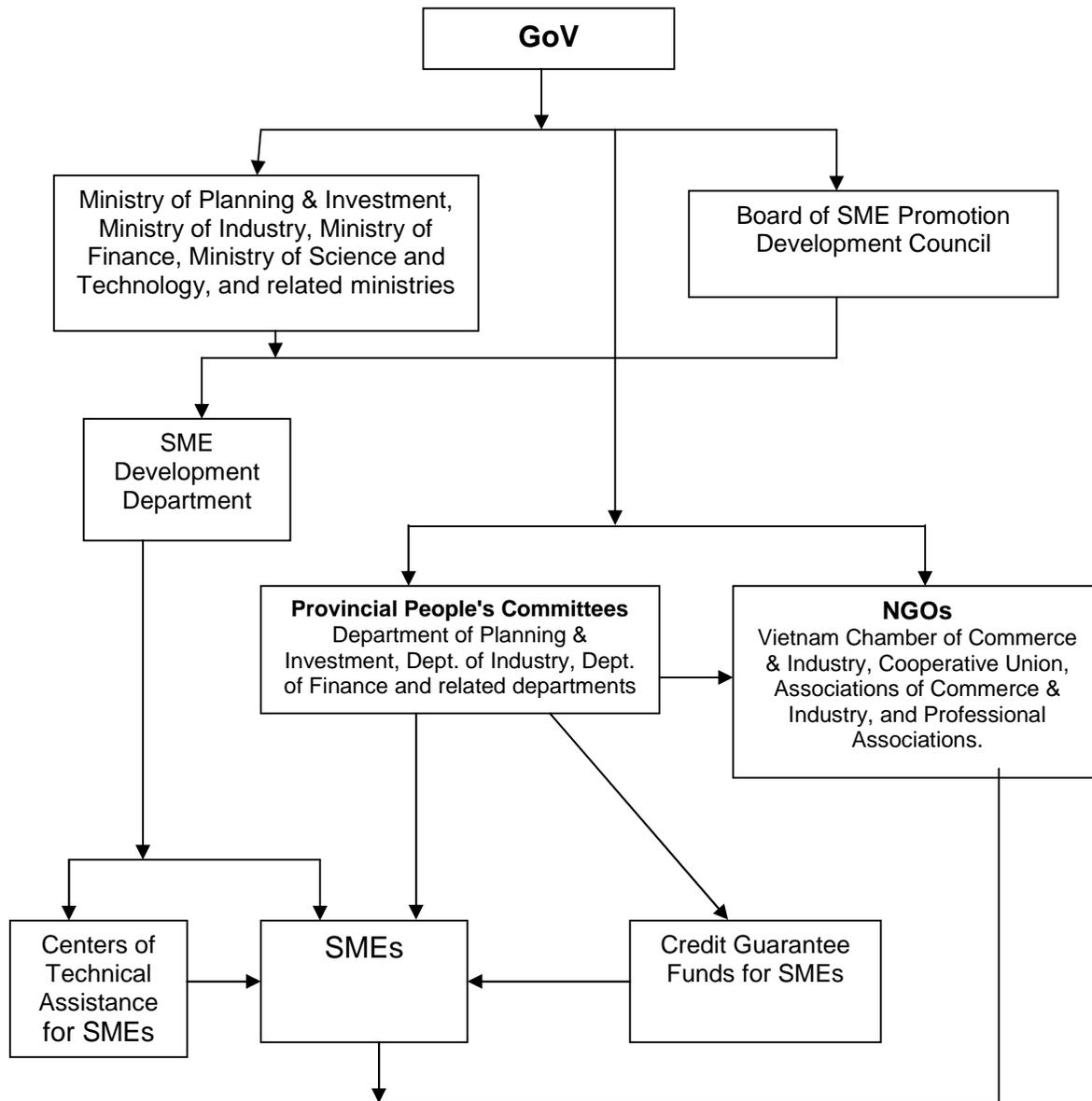
The GoV has been supportive of SME development, and issued a decree in 2001⁹ on SME development assistance. This decree established policy-making agencies, central and local sectoral and inter-sector management agencies, and coordinating, cooperating and supporting agencies for SMEs. In particular, the SME development decree led to the development of the SME Development Department (SMEDD) and the SME Promotion Council (SMEPC), as well as the establishment of an Export Support Fund at the central level and Credit Guarantee Funds for SMEs in the provinces to access commercial bank funding sources. These developments were led by the MoPI, which has the overarching role of supporting SMEs. However, many of these new agencies and activities are still going through elements of their establishment and development phases. These institutional arrangements are shown on Figure 1.

With the SME sector in Vietnam becoming increasingly exposed to internal and external competitive pressures, reduction of energy costs has emerged as a key imperative for SME survival and future development. It is well known that SMEs generally lack the knowledge of and are unable to implement energy conservation measures. They are also characterized by their lack of collateral and the consequential inability to access the financing to implement energy conservation investments, notwithstanding the existence of financial mechanisms in place in Vietnam with significant funds allocated that have not yet been disbursed.

Furthermore, prior to PECSME, most equipment commonly used in the SME sector in Vietnam was energy inefficient with high consumption. There was also very limited management and staff training and skills available to operate this antiquated equipment at optimal levels. The technologies required to address this energy inefficiency, however, were largely conventional and proven and within the capacity of manufacturers and importers in Vietnam to supply and support.

⁹ No. 90/2001/ND-CP dated 23 November 2001 on Assistance to SME Development

Figure 1: Institutional Arrangements for Agencies Supporting SMEs



1.2 Project Goals, Objectives and Expected Results

The project development **goal** is to reduce the annual growth rate of GHG emissions through the removal of key barriers to the adoption of more energy efficient technologies and energy efficient practices in the SME sector.

To achieve this goal, the Project was designed with a number of **project outputs and outcomes:**

- Outcome 1: Improved EE & EC awareness and improved capacity for EE & EC policy development that would increase the impact of existing policies and recently enacted EE & EC decree through strengthened relevant ministries, departments and agencies of the Government of Vietnam;
- Outcome 2: Adoption of a communications strategy to enhance SME and public awareness of EE & EC through an integrated communications system including information collection, dissemination and reporting;
- Outcome 3: Enhanced EE & EC capacity that has been developed through a comprehensive training plan that improves technical and financial skills;
- Outcome 4: High quality and sustainable energy services available in Vietnam through development of technical support for EE & EC professionals;
- Outcome 5: Improved understanding of the banking and financial sector of the benefits of EE & EC investments to the extent that they would be willing to finance SMEs through loan guarantees;
- Outcome 6: Full operational demonstration projects that increase the credibility of EE & EC investments and improve the probabilities of replication.

Section 2 will provide more detail on the achievements to date of the project's outcomes and outputs.

1.3 Mid-Term Evaluation

1.3.1 Purpose of the Evaluation

The purpose of the mid-term evaluation (MTE) for this Project is to evaluate the progress towards attainment of global environmental objectives, project objectives and outcomes, capture lessons learned and suggest recommendations on major improvements. The MTE is to serve as an agent of change and play a critical role in supporting accountability. As such, the MTE will serve to:

- Strengthen the adaptive management and monitoring functions of the Project;
- Enhance the likelihood of achievement of Project and GEF objectives through analyzing project strengths and weaknesses and suggesting measures for improvement;
- Enhance organizational and development learning;
- Enable informed decision-making;
- Create the basis for replication of successful project outcomes achieved to date;
- Identify and validate proposed changes to the Prodoc to ensure achievement of all project objectives; and
- Assess whether it is possible to achieve the objectives in the given timeframe, taking into consideration the speed, at which the project is proceeding.

In accordance with UNDP/GEF monitoring and evaluation (M&E) policies and procedures, all projects with long implementation periods (e.g. over 5 or 6 years) are strongly encouraged to conduct mid-term evaluations. In addition to providing an independent in-depth review of

implementation progress, this type of evaluation is intending to be responsive to GEF Council decisions on transparency and better access of information during implementation. MTEs are intended to identify potential project design problems, assess progress towards the achievement of objectives, identify and document lessons learned (including lessons that might improve design and implementation of other UNDP/GEF projects), and to make recommendations regarding specific actions that might be taken to improve the project. It is expected to serve as a means of validating or filling the gaps in the initial assessment of relevance, effectiveness and efficiency obtained from monitoring. The MTE provides the opportunity to assess early signs of project success or failure and prompt necessary adjustments.

For these reasons, a mid-term evaluator was mobilized to Vietnam during the period 15-26 September 2008 for the MTE of this UNDP-GEF Project. The terms of reference for the Evaluator is shown in Appendix A.

1.3.2 Key Issues to be Addressed

In addition to the evaluation of the whole project and its components, the key issues to be addressed on this MTE included:

- the performance of the Project loan fund guarantee facility to facilitate SME financing of energy conservation investments; and
- efficiency of PECSME implementation and PMU capacity to manage an increasing work load in monitoring and evaluation of replication projects.

Outputs from this MTE will be used to chart future directions on this Project.

1.3.3 Evaluation Methodology and Structure of the Evaluation

The methodology adopted for this evaluation includes:

- Review of project documentation (i.e. project documents, PIRs, AWP, internal Project evaluations) and pertinent background information;
- Interviews with key project personnel including the Project Manager, the international technical advisor, Project staff, and relevant UNDP staff;
- Interview with relevant stakeholders from Government (e.g. Ministry of Industry and Trade, Ministry of Science and Technology); and
- Field visits to selected project sites and interviews with beneficiaries.

A detailed itinerary of the Mission is shown in Appendix B. A full list of people interviewed and documents reviewed is given in Annex C. The Evaluation Mission for the UNDP-GEF project comprised of one International Energy Expert.

This evaluation report is presented as follows:

- An overview of project implementation from the commencement of operations in October 2005;
- Review of project results based on project design and execution;

- Conclusions and recommendations that can increase the probabilities of a successful project completion; and
- Lessons learned from implementation of the project to date.

This evaluation report follows the format specified in Appendix A, pages 56 and 57 and by the UNDP Guideline for Evaluators, June 2002:

http://www.undp.org/gef/05/documents/me/UNDP_ME_Handbook.pdf

As a supplement to UNDP Guidelines, GEF's "Monitoring and Evaluation Policies and Procedures" of February 2006 (pages 13-18) were also taken into account:

http://www.undp.org/gef/05/documents/me/GEF_ME_Policies_and_Procedures_06.pdf

1.4 Project Implementation Arrangements

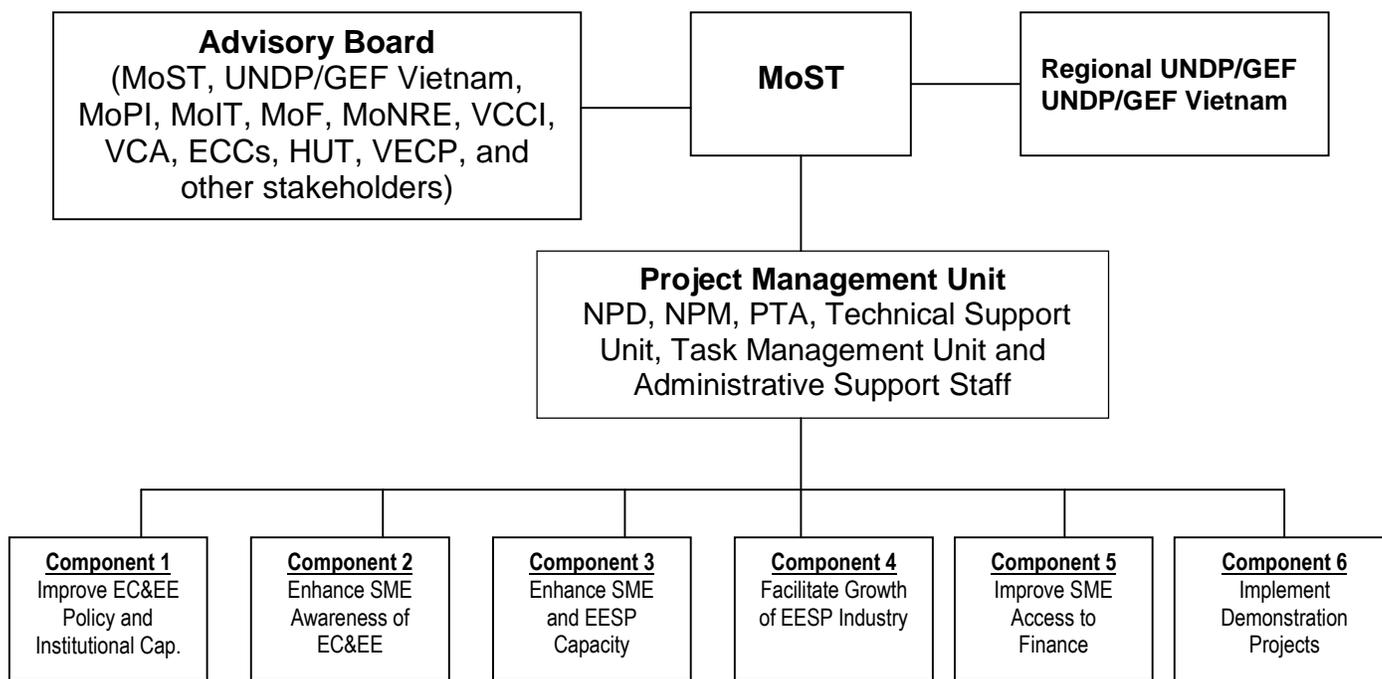
The project organization chart is shown on Figure 2. The original 2004 PECSME design allocated UNDP-GEF funds to provide:

- technical assistance for monitoring and evaluation, legal and regulatory framework, and project preparation and management;
- financial support through capitalization of a "renewable energy fund", financial consulting for local banks and fund administration; and
- support for policy dialogue with the GoV with regards to improving tariff regimes for SHPPs and renewable energy in general.

The main stakeholders on the Project include:

- Ministry of Science and Technology (executing agency);
- Department of Science and Technology (management of provincial energy conservation centers (ECCs)/TTCs that promote EC&EE with local SMEs);
- Ministry of Natural Resources and Environment (GEF focal point and monitoring of GHG emissions);
- Vietnam Environmental Protection Fund (MoNRE-administered fund that funds EC&EE investments amongst other environmental projects);
- Ministry of Industry and Trade (for EC&EE policy development and implementation of national EC&EE programs);
- Ministry of Finance (for policy and regulatory guidance on financial matters);
- Vietnam Bank for Industry and Trade (management of PECSME Loan Guarantee Facility and provision of funds for financing EC&EE projects for SMEs);
- Vietnam Association of Small and Medium Enterprises;
- Emerging Energy Service Providers (EESPs who provide specialized technical assistance and implementation of EC&EE projects throughout Vietnam);
- Hanoi University of Technology (management of program to build technical capacity of EESPs);
- Investors and interested local SMEs for EC&EE project implementation.

Figure 2: PECSME Project Implementation Arrangements



2. KEY FINDINGS

2.1 Project Progress and Achievements to Date

PECSME is a project designed to reduce GHG emissions through energy conservation measures by SMEs in Vietnam. The Project has undertaken an integrated series of measures designed to remove awareness, technical, financial and regulatory barriers that hinder widespread adoption of EE&EC by SMEs. Actual PECSME achievements are listed in Table 1 against the original April 2004 Project log-frame with suggested revisions to better reflect the intended outcomes of PECSME and GEF reporting requirements. Proposed revisions include:

- Changing of “strategies” to intended “outcomes”;
- Changing “indicators” to “targets”; and
- Removal of various “strategies” that only reflects PECSME activities.

Changes to the Project log-frame are further detailed on Table 1 and discussed in Section 2.3.2. The original Project log-frame from April 2004 is shown in Appendix D.

2.1.1 Project Outcomes

The implementation of technical assistance has been in accordance with the work plan towards the achievement of project objectives including:

- Drafting of an energy conservation law (EC Law) that is to be presented to the Vietnamese government for promulgation in 2009;
- Completion of the setup of information support networks specific to increasing the awareness of EC&EE for the public, policy makers, SMEs, EESPs and other technical support professionals;
- Training programs for SMEs to increase their awareness of energy efficiency measures, the impacts of these measures on their businesses and the means to implement such measures;
- Training programs for energy efficient service providers (EESPs) to improve the quality of their technical assistance to SMEs and financial institutions to implement EE measures;
- Setup of a loan guarantee fund that provides collateral for SMEs seeking finance for implementation of specific EE and EC measures; and
- Completion of demonstration projects to raise confidence in various EC&EE measures.

With the project design and competent management of the PMU, PECSME is likely to achieve its intended targets. There are, however, a number of risk factors and issues that potentially impede PECSME from achieving these targets by the conclusion of the project:

⇒ *The limited capacity of Vietnam’s EESPs restricts the number of SME EC projects that can be implemented (related to Outcome 4).*

A majority of the project stakeholders agree that the growth of SME implementation of EC activities can more rapidly expand during the remainder of the project on condition that there is growth in the numbers of trained EESPs who can train other EESPs.

Table 1: Project Progress Observed in September 2008

Intended Project Outcomes (taken from 2004 Prodoc Log-Frame "Strategy" and the 2008 APR-PIR and converted to "Intended Outcomes")	Targets (formerly "Indicators") (taken from April 2004 Prodoc and 2008 APR-PIR with recommended changes in bold italics font and strikethrough font)	Outcomes as of September 2008
Project Goal: Reduce the annual growth rate of GHG emissions from SMEs through the removal of major barriers to adoption of more energy efficient technologies and energy management practices.	Cumulative GHG emission reduction from SME activities of about 962.0 ktonnes CO _{2eq} by the end of the PECSME in Year 2010. Target change recommended: Revise this cumulative target to 536.8 ktonnes CO₂ as it is based on more realistic CO₂ reductions of the technologies being adopted by SMEs	<ul style="list-style-type: none"> Partially achieved. Cumulative GHG emission reductions at the mid-point of 2008 from implemented EC projects is 84.0 ktonne or 8.7% of the 962.0 ktonne CO_{2eq} target
Project Purpose: To significantly improve energy utilization efficiency in the SME sector	<ul style="list-style-type: none"> Cumulative energy savings of 136.1 kTOE in the SME sector achieved by end of Year 2009. Average energy cost per unit production in the SME sector is reduced by 10-15% by Year 5. 	<ul style="list-style-type: none"> Cumulative 22.6 kTOE achieved from implemented EC projects at mid-point of 2008 12% savings achieved in unit production in SME demonstration projects.
Outcome 1: Improved EC&EE Policy and Institutional capacity		
Outcome 1.1: Improved EC&EE awareness and capacity on EC&EE policy development within the GoV	<ul style="list-style-type: none"> 3 national seminars with total of 450 participants held in the first and second years 4 training courses held with 100 central and local government officers trained 3 study tours conducted At least 6 policy papers and policy recommendations on EC&EE proposed by capable policy makers at central and local levels starting Year 2. 	<ul style="list-style-type: none"> Partially achieved. The first National Seminar was conducted in 2006 with 150 participants from government agencies, local authorities, organizations and enterprises Achieved. 10 training courses held with over 306 local DoST trained on economic and environment benefits of EC&EE measures and technologies in five selected sectors (in combination with Activity 3.2); Achieved. Three study tours completed (China, Thailand and Korea) with participation of 28 representatives from key project partners and stakeholders Partially achieved. Law on EC&EE in the drafting process with 7 initiatives on EC&EE issued by local governments (Hai Phong, Binh Duong, Da Nang, HCMC, Giang An, Vinh Phuc, Hai Duong and Ha Noi) in 2007. Also assisted drafting of Law on Technology Transfer (promulgated in 2006 by National

Table 1: Project Progress Observed in September 2008

Intended Project Outcomes (taken from 2004 Prodoc Log-Frame “Strategy” and the 2008 APR-PIR and converted to “Intended Outcomes”)	Targets (formerly “Indicators”) (taken from April 2004 Prodoc and 2008 APR-PIR with recommended changes in <i>bold italics font</i> and strikethrough font)	Outcomes as of September 2008
	<ul style="list-style-type: none"> • Circular on Labeling formulated and approved by MOI • Circular on Tax Incentives & Financial Incentives formulated and submitted to MOF for approval • 3 formulated and MoST-approved regulations related to promotion of EC&EE technology transfer in SMEs²² • 3 workshops on the introduction and promotion of new circulars completed • 3 EE equipment producers that participate in labeling program • 3 EE products labeled • 500 SMEs utilize incentives • Recommendations on future enhancements of SME EC&EE policies completed by Year 5. • 	<p>Assembly and in effect July 2007), guiding regulations, and MoIT Law on Energy Conservation and Efficient Use</p> <ul style="list-style-type: none"> • <i>Achieved</i>. One circular on EC&EE Labeling approved by MOI and implemented in 2007. Two groups of EE products labeled. • <i>Achieved</i>. Drafted circular completed with proposed incentives to be incorporated in the draft EC&EE law to be issued in 2009. • <i>Achieved</i>. Completed and submitted 3 draft Decrees to guide the Implementation of the Law on Technology Transfer. Approval by Prime Minister is pending²³ • <i>Partially achieved</i>. One workshop on promotion of EC&EE Labeling conducted; EC&EE labels granted to three energy saving lighting products: T8-36W, T5-32W, and Electromagnetic Ballast • <i>Achieved</i> • <i>Achieved</i> • <i>Partially achieved</i>. 104 SMEs utilized incentives provided by People Committees of 04 provinces • <i>Not yet achieved</i>
Outcome 1.3: Technical assistance provided to SMEPC and SMEDD to incorporate EC&EE programs into the National SME Development Support Program	<ul style="list-style-type: none"> • EC&EE policies incorporated into the National SME Dev't Program 	<ul style="list-style-type: none"> • <i>Not yet achieved</i>.
Outcome 1.4: EC&EE coordinating agencies in the SME sector and provincial technical support networks	<ul style="list-style-type: none"> • Network between PMU and ECCs/DOSTs and key project partners established, maintained regular communication 	<ul style="list-style-type: none"> • <i>Achieved</i>

²³ 3 Government Decrees namely: The List of Encouragement and Prohibition of Technologies Transfer; The Fund for Technology Transfer Promotion (including EC&EE Technology Transfer in SME Sector) and Guideline on Implementation of Technology Transfer.

Table 1: Project Progress Observed in September 2008

Intended Project Outcomes (taken from 2004 Prodoc Log-Frame “Strategy” and the 2008 APR-PIR and converted to “Intended Outcomes”)	Targets (formerly “Indicators”) (taken from April 2004 Prodoc and 2008 APR-PIR with recommended changes in <i>bold italics font</i> and strikethrough font)	Outcomes as of September 2008
are established and operational	<ul style="list-style-type: none"> EC&EE Expert Association established by end-Year 3. 150 EC&EE projects that are annually supported by the Expert Association starting from Year 4. <p>Recommended change: Remove above target as this is set by the EC&EE Association</p>	<ul style="list-style-type: none"> <i>In progress.</i> Promotion activities on-going
Outcome 1.5: MoNRE capacity is improved in modifying environmental standards related to GHG emissions	<ul style="list-style-type: none"> 3 national environmental standards related to GHG emission updated 3 revised environmental standards enforced 	<ul style="list-style-type: none"> <i>Not yet achieved</i> <i>Not yet achieved.</i> This is due to ongoing MoNRE restructuring. MoNRE staff will need to be familiar with regional environmental standards for targeted sectors (cement, thermal power plants and steel). As such, work on this activity is deferred to Year 4.
Outcome 2: Enhanced SME and public awareness of EC&EE		
Outcome 2.1: Communications strategy developed	<ul style="list-style-type: none"> Strategy developed and agreed to by key stakeholders by end Year 1. 	<ul style="list-style-type: none"> <i>Achieved.</i> Project communication strategy finalized in October 2006 and implemented in 2007. In 2008, adjustment was made to focus the communication activities on the priority sectors/geographic areas to improve contribution to the 2008 targets
Outcome 2.2: Information dissemination network established and the capacity of organizations involved in information network strengthened	<ul style="list-style-type: none"> Information network established and relevant participating organizations identified Two training courses for EC&EE communicators of participating organizations conducted 20 trained participants actively participate in information dissemination At least 80% trainees actively participate in EC&EE information dissemination activities 2 successful locally study tours for information network participants conducted 50% of study tour participants contributing their learning experiences to PECSME information dissemination activities 	<ul style="list-style-type: none"> <i>Achieved.</i> An informal network of 20 EC&EE communicators in SME sector established <i>Partially achieved.</i> Communication training course completed with 35 participants from ECCs, DOSTs and media <i>Achieved.</i> <i>Partially achieved.</i> 67% (20/35) trained participants actively participate in EC&EE information dissemination activities <i>Partially achieved.</i> One domestic study tour to the Energy Information Center in HCMC conducted <i>Achieved.</i> 67% participants of the study tour contributing their learning experiences to PECSME information dissemination activities

Table 1: Project Progress Observed in September 2008

Intended Project Outcomes (taken from 2004 Prodoc Log-Frame “Strategy” and the 2008 APR-PIR and converted to “Intended Outcomes”)	Targets (formerly “Indicators”) (taken from April 2004 Prodoc and 2008 APR-PIR with recommended changes in <i>bold italics font</i> and strikethrough font)	Outcomes as of September 2008
<p>Outcome 2.3: Awareness of SME and general public on EC&EE assessed</p> <p>Recommended Change: Remove as this is not a project “outcome” but more reflective of an evaluation activity</p>	<ul style="list-style-type: none"> ● Initial survey on knowledge, attitudes and practices regarding utilization of energy among SMEs completed in Year 1. ● Feedback surveys completed by mid Year 4. ● A EC&EE communication program incorporating recommendations based on SME feedbacks 	<ul style="list-style-type: none"> ● Achieved. ● Not yet achieved ● Not yet achieved
<p>Outcome 2.4: SME energy-use database developed</p>	<ul style="list-style-type: none"> ● SME energy-use database developed by Year 2. ● Over 1,000 users of the database 	<ul style="list-style-type: none"> ● <i>Achieved</i> ● <i>Achieved</i>
<p>Outcome 2.5: EC&EE information disseminated to SMEs through the network</p>	<ul style="list-style-type: none"> ● Website on EC&EE information of SME sector operational by Year 1. ● 50,000 hits on the website ● 25,000 users of website ● 20 leaflets on EC&EE published and disseminated. ● 5 booklets on EC&EE published and disseminated ● 100,000 leaflets and booklets disseminated ● 20 articles on EC&EE topics published in leading local newspapers and magazines annually ● 6 TV programs in central and local channel annually ● 6 Voice of Viet Nam programs broadcasted annually 	<ul style="list-style-type: none"> ● <i>Achieved</i> ● <i>Achieved.</i> Over 214,000 hits ● <i>Partially achieved.</i> 16,800 users ● <i>Partially achieved.</i> 13 leaflets disseminated ● <i>Partially achieved.</i> 1 booklet published ● <i>Partially achieved.</i> 90,000 disseminated ● <i>Achieved.</i> Over 40 published ● <i>Achieved.</i> 12 programs completed ● <i>Achieved:</i> 10 Voice of Vietnam programs completed
<p>Outcome 2.6: EC&EE advocacy and awareness campaign completed</p> <p>Recommended Change: Re-word outcome to: “Public awareness enhanced through completion of EC&EE advocacy campaigns”</p>	<ul style="list-style-type: none"> ● 11 workshops, forums and information exchange meetings conducted by ECCs ● 2 exhibitions of energy efficient equipment held by MoST annually from Year 2 ● Contest writing on EC&EE issue for Media agencies’ reporters ● 12 EE equipment suppliers and EESPs using PECSME marked materials on their products ● 	<ul style="list-style-type: none"> ● <i>Achieved (more than 30 organized)</i> ● <i>Achieved</i> ● <i>Achieved</i> ● <i>Partially achieved (only 3 equipment suppliers)</i>
<p>Outcome 2.7: SMEs registered for receiving technical assistance for</p>	<ul style="list-style-type: none"> ● 420 SMEs registered to implement EC&EE projects through ECCs/DoSTs 	<ul style="list-style-type: none"> ● <i>Partially achieved (207 SMEs)</i>

Table 1: Project Progress Observed in September 2008

Intended Project Outcomes (taken from 2004 Prodoc Log-Frame “Strategy” and the 2008 APR-PIR and converted to “Intended Outcomes”)	Targets (formerly “Indicators”) (taken from April 2004 Prodoc and 2008 APR-PIR with recommended changes in <i>bold italics font</i> and strikethrough font)	Outcomes as of September 2008
implementing EE&EC projects		
Outcome 3: SME and EESP capacity has been enhanced to implement EE&EC projects.		
Outcome 3.1: Training for trainers provided	<ul style="list-style-type: none"> • 12 training material modules completed and approved • 30 trainers certified by MOST • 21 trained trainers providing EC&EE training under the project 	<ul style="list-style-type: none"> • <i>Partially achieved (only 11 prepared)</i> • <i>Partially achieved (only 28 certified)</i> • <i>Partially achieved (only 18 trained trainers)</i>
Outcome 3.2: SME training courses conducted Recommended change: Re-word to “SME knowledge improved on the benefits of EC&EE”	<ul style="list-style-type: none"> • 500 SME managers from selected provinces trained through 1-day training seminars on benefits of EC&EE by Year 2 • 100 DoST officers from selected provinces trained through 1-day training seminars on benefits of EC&EE • 500 technicians from SMEs in selected provinces in Northern, Central and Southern areas trained on EC&EE techniques and practices. • At least 500 SMEs are implementing EC&EE techniques and practices from Years 3 to 5. 	<ul style="list-style-type: none"> • <i>Achieved (662 trained)</i> • <i>Achieved (306 trained)</i> • <i>Partially achieved (209 trained)</i> • <i>Partially achieved (132 SMEs)</i>
Outcome 3.3: Sustainable EC&EE training programs developed for relevant universities and colleges Recommended Change: Remove as this is no longer being implemented by PECSME	<ul style="list-style-type: none"> • EC&EE training program design completed • 3 universities/colleges committed to include EC&EE in their engineering curricula 	
Outcome 3.4: Training program has been evaluated Recommended Change: Remove as this is not a project “outcome” but more reflective of an evaluation	<ul style="list-style-type: none"> • Redesign of the training program incorporating recommendations from evaluation findings completed by mid-Year 5. 	<ul style="list-style-type: none"> • <i>Achieved</i>

Table 1: Project Progress Observed in September 2008

Intended Project Outcomes (taken from 2004 Prodoc Log-Frame “Strategy” and the 2008 APR-PIR and converted to “Intended Outcomes”)	Targets (formerly “Indicators”) (taken from April 2004 Prodoc and 2008 APR-PIR with recommended changes in bold italics font and strikethrough font)	Outcomes as of September 2008
activity		
Outcome 3.5: Energy audits of selected SMEs completed Recommended change: Re-word to “Capacity to conduct energy audits is strengthened”	<ul style="list-style-type: none"> • 60 energy consultants trained in energy auditing and undertook audits at selected sites • 50% of trained energy consultants undertake energy audits at selected sites by Year 3. • 500 energy audits and/or feasibility studies conducted Recommended change: Reduce the number of energy audits and/or feasibility studies to 250.	<ul style="list-style-type: none"> • <i>Achieved</i> • <i>Achieved</i> • <i>Partially achieved (only 87 conducted)</i>
Outcome 4: Growth of competitive and sustainable EE services provision industry through enhanced business, engineering and financial skills of EESPs		
Outcome 4.1: EESP training program completed	<ul style="list-style-type: none"> • 60 energy consultants from EESPs trained on EC engineering and financial arrangement for investment projects • 15 managers of potential EESPs trained on developing business plans and designing energy efficiency service packages • 10 EESPs that have prepared business plans following the model presented in the training course by Year 3 • 3 new EESP businesses that are legally established • 3 consulting firms incorporates energy efficiency services provision into their business operations Recommended change: eliminate indicator of 3 consulting firms incorporating EE into their business services	<ul style="list-style-type: none"> • <i>Achieved (72 on energy audits and 65 on financial analysis and loan document preparations)</i> • <i>Achieved</i> • <i>Surveys being conducted</i> • <i>Achieved</i>
Outcome 4.2: Suitable institutional and legal framework developed for EESP activities	<ul style="list-style-type: none"> • Recommended suitable institutional and legal framework for EESPs submitted to MoIT 	<ul style="list-style-type: none"> • <i>Not yet achieved. A legal specialist is required to prepare concept paper that recommends for risk exposure reduction measures for future EESPs. A review of the experience of existing EESPs is also required.</i>
Outcome 4.3: Project assistance has	<ul style="list-style-type: none"> • 5 technical assistance services provided to local EESPs in making bankable project proposals, business plans 	<ul style="list-style-type: none"> • <i>Partially achieved (only one consultation provided)</i>

Table 1: Project Progress Observed in September 2008

Intended Project Outcomes (taken from 2004 Prodoc Log-Frame “Strategy” and the 2008 APR-PIR and converted to “Intended Outcomes”)	Targets (formerly “Indicators”) (taken from April 2004 Prodoc and 2008 APR-PIR with recommended changes in <i>bold italics font</i> and strikethrough font)	Outcomes as of September 2008
been provided for EESP operations	and in securing financing for SME clients. <ul style="list-style-type: none"> • On-job training provided to local EESPs in EC&EE project development and implementation • EESP energy efficiency engineering design tools and model marketing strategies developed • 4 EESPs utilizing the EE design tools and marketing strategies 	<ul style="list-style-type: none"> • <i>Achieved</i> • <i>Achieved</i> • <i>In progress. Survey being conducted</i>
Outcome 4.4: Model contracts to deliver EESP services to SMEs completed and executed	<ul style="list-style-type: none"> • 50 EESP contracts for providing energy efficiency services marketed and implemented with SMEs during Year 3 and 5. 	<ul style="list-style-type: none"> • <i>Achieved.</i>
Outcome 4.5: Assessment of local capabilities for EE equipment supply completed	<ul style="list-style-type: none"> • Evaluation of capabilities of local EE equipment provision prepared by mid-Year 2. • Recommendation on EE equipment provision development program prepared and submitted to MoST. 	<ul style="list-style-type: none"> • <i>Achieved</i> • <i>Not yet achieved</i>
Outcome 4.6: Energy performance of industrial equipment evaluated	<ul style="list-style-type: none"> • Evaluation of energy performance of locally produced industrial equipment prepared by end-Year 2. • Identification of energy performance improvement potential for locally produced industrial equipment completed and submitted to MoST by end-Year 2. 	<ul style="list-style-type: none"> • <i>In progress</i> • <i>In progress</i>
Outcome 4.7: Technical capacity of local equipment manufacturers and fabricators enhanced	<ul style="list-style-type: none"> • Training courses on high efficiency equipment design and production technologies for local manufacturers/fabricators conducted by Year 3. • 6 manufacturers are either implementing or planning to invest in production of high-energy efficient equipment in the ceramic and brick sectors. 	<ul style="list-style-type: none"> • <i>In progress</i> • <i>Not yet achieved</i>
Outcome 4.8: Sustainable EC&EE Research and Development Program has been designed	<ul style="list-style-type: none"> • An R & D program supported by local equipment manufacturers/fabricators and MoST completed by mid-Year 4. 	<ul style="list-style-type: none"> • <i>Not yet achieved</i>
Outcome 5: <i>Increase financial system willingness to lend to SME for EC&EE Projects through enhanced knowledge of EC and skills in evaluating loan application</i>		

Table 1: Project Progress Observed in September 2008

Intended Project Outcomes (taken from 2004 Prodoc Log-Frame “Strategy” and the 2008 APR-PIR and converted to “Intended Outcomes”)	Targets (formerly “Indicators”) (taken from April 2004 Prodoc and 2008 APR-PIR with recommended changes in <i>bold italics font</i> and strikethrough font)	Outcomes as of September 2008
Outcome 5.1: Increased banking and finance sector awareness of the benefits of EC&EE projects	<ul style="list-style-type: none"> 4 training courses on risk & benefits and evaluation of EC&EE projects for banking and financial institutions 9 banks/FIs are providing loans for EC&EE projects to SMEs by Year 3 Established and operational technical service network for helping banks and financial institutions evaluate EC&EE projects by Year 2 	<ul style="list-style-type: none"> <i>Partially achieved.</i> 1 Training course on risk, benefits & evaluation of EC projects for 33 credit officers from banking and financial sector conducted at end of 2007 <i>Partially achieved.</i> 5 financial institutions (VEPF and 4 VietinBank branches) have been providing loans for EC&EE projects <i>In progress.</i>
Outcome 5.2: Improved SME access financing for EC&EE Projects	<ul style="list-style-type: none"> 2 brochures/guides on sources of financing, loan guarantees and bank requirements for EC&EE investments published and circulated to SMEs and each target group by Year 2. 3 annual roundtable discussions between banks and SMEs are conducted from Year 2 10 loan contracts discussed in each round table meeting starting Year 2 	<ul style="list-style-type: none"> <i>Achieved.</i> 3 brochures on Loan Guarantee Fund and Loan Program provided by VietinBank published and disseminated to SMEs, EESPs and DoSTs <i>Achieved.</i> 3 meetings completed <i>Achieved.</i> 13 completed to date
Outcome 5.3: Mobilization of a loan guarantee funding mechanism	<ul style="list-style-type: none"> Expanded VietinBank guarantee fund to support EC&EE investments operational by Year 2 Approved guarantee operation regulation by Year 2. A set of criteria for guarantee fund completed and enforced by Year 2 80 SMEs that received loan guarantee assistance US\$3.9 million issued from LGF in loan guarantee commitments. 	<ul style="list-style-type: none"> <i>Achieved.</i> Agreement on LGF Management signed by MoST, VietinBank and UNDP in December 2006 <i>Achieved.</i> Guideline on LGF operation within VietinBank branches approved in May 2007 and disseminated to VietinBank branches in June 07 <i>Achieved.</i> <i>Partially achieved.</i> 13 SMEs received LGF assistance <i>Partially achieved.</i> US\$400,000 issued from LGF
Outcome 5.4: Mobilization of VietinBank’s Loan Program Recommended Change: Change outcome to “Replication projects funded from various financial sources”	<ul style="list-style-type: none"> 60 80 SMEs that received financing from the VietinBank Loan Program and other various financial sources US\$14.1 million in loans provided to SMEs from the Loan Program US\$14.1 million in loan repayments received from SMEs <p>Recommend removal of this indicator as it</p>	<ul style="list-style-type: none"> <i>Partially achieved.</i> 8 SMEs have received finance from the Loan Program, 6 received LGF support <i>Partially achieved.</i> US\$ 730,177 loaned to date <i>Partially achieved.</i> US\$71,000 received up to date

Table 1: Project Progress Observed in September 2008

Intended Project Outcomes (taken from 2004 Prodoc Log-Frame “Strategy” and the 2008 APR-PIR and converted to “Intended Outcomes”)	Targets (formerly “Indicators”) (taken from April 2004 Prodoc and 2008 APR-PIR with recommended changes in bold italics font and strikethrough font)	Outcomes as of September 2008
	would be difficult to attain this goal since all loans are not expected to be paid back until 2015. In addition, it would be difficult to estimate cumulative actual loan payments at the end of PECSME as it is dependent on when these projects are implemented).	
<p>Outcome 5.5: Provision of additional TA and funding for EC&EE investments</p> <p>Recommended Change: Remove this outcome as it would be combined with Outcome 5.4</p>	<ul style="list-style-type: none"> ● 2 other financial institutions are willing to provide financing for EC&EE projects ● 80 EC&EE projects funded by other financial institutions starting from end-Year 2. <p>Combine these indicators with those of Outcome 5.4</p>	<ul style="list-style-type: none"> ● Achieved. National Environment Protection Fund of Vietnam has made their funds available for EC&EE projects and Techcombank are interesting to participate in PECSME LGF Program. ● Partially achieved. 7 projects received US\$228,606 in loan provisions from VEPF, all of which received LGF guarantees <p>Combine these achievements with those of Outcome 5.4</p>
<p>Outcome 5.6: Established financing mechanisms evaluated</p> <p>Recommended Change: Remove as this is not a project “outcome” but more reflective of an evaluation activity</p>	<ul style="list-style-type: none"> ● Completed Evaluation Reports on effectiveness and viability of financing mechanisms by mid-Year 3 and mid-Year 5 ● Completed sustainable financing program proposal by end-Year 5 	<ul style="list-style-type: none"> ● Achieved. LGF Evaluation Report completed in September 2008.
<p>Outcome 6: Increased credibility of EC&EE through successfully implemented and evaluated demonstration projects</p>		
<p>Outcome 6.1: Completed thorough techno-economic feasibility analyses of potential EC&EE demonstration projects</p>	<ul style="list-style-type: none"> ● 10 demonstration projects selected by mid-Year 1. 	<ul style="list-style-type: none"> ● Achieved. 10 projects selected
<p>Outcome 6.2: Demonstration requirements identified and evaluated</p>	<ul style="list-style-type: none"> ● Completed set of criteria for selection of demonstration projects developed by the mid-Year 1. 	<ul style="list-style-type: none"> ● Achieved. Set of criteria completed
<p>Outcome 6.3: Demonstration project</p>	<ul style="list-style-type: none"> ● 2 companies that have agreed to receive financial 	<ul style="list-style-type: none"> ● Achieved. 2 companies have made agreements to receive

Table 1: Project Progress Observed in September 2008

Intended Project Outcomes (taken from 2004 Prodoc Log-Frame “Strategy” and the 2008 APR-PIR and converted to “Intended Outcomes”)	Targets (formerly “Indicators”) (taken from April 2004 Prodoc and 2008 APR-PIR with recommended changes in <i>bold italics font</i> and strikethrough font)	Outcomes as of September 2008
financial barrier removed	assistance for demonstration investment proposals by mid-Year 2	financial assistance for demonstration projects with LGF
Outcome 6.4: Baseline data for demonstration sites collected	<ul style="list-style-type: none"> 10 approved/agreed sets of baseline data for demonstration sites 	<ul style="list-style-type: none"> <i>Achieved.</i> 10 sets of baseline data completed for 10 demonstration sites
Outcome 6.5: Demonstration projects implemented	<ul style="list-style-type: none"> 10 demonstration site owners that are satisfied with the technical assistance provided during facility start-up 10 training sessions for demonstration project operating personnel completed 10 evaluation reports completed for 10 demonstration projects highlighting operating and economic performance 8,000 TOE saved by the demonstration sites 53,000 tonnes CO₂ eq reduced at demonstration sites 	<ul style="list-style-type: none"> <i>Achieved.</i> 10 demo projects completed at end of 2007 <i>Achieved.</i> 10 training sessions for demo project personnel <i>Achieved.</i> 10 completion reports completed for 10 demo projects <i>Achieved.</i> 8,725 TOE cumulative saved <i>Partially achieved.</i> 35,520 tonnes CO₂ eq cumulative reduced by demo projects
Outcome 6.6: Demonstration projects experiences shared with other stakeholders	<ul style="list-style-type: none"> 12 national workshops presenting demonstration program results conducted Documented evaluation of the operation of the demonstration program completed by end of project. 	<ul style="list-style-type: none"> <i>Achieved.</i> 14 workshops conducted in combination with Outcome 2 <i>Achieved.</i> Evaluation of Demo Program completed in September 2008
Outcome 6.7: Technical assistance for implementation of 500 EC&EE investments provided	<ul style="list-style-type: none"> 80 EC&EE investments implemented through guarantee and energy service delivery mechanism. 500 EC&EE replication and impact projects implemented with support from PECSME Cumulative 136.1 kTOE saved by EC&EE projects by SMEs in the country Total cumulative GHG emission reductions from EC&EE projects of SMEs in the country, 962.0 536.8 kton CO₂ <p>Target revised as per targets under “Project Goal”</p>	<ul style="list-style-type: none"> <i>Partially achieved.</i> 13 EC&EE investment projects got LGF support with another 14 feasibility studies applying to get LGF support <i>Partially achieved.</i> Total 124 projects implemented (67 Replication Projects and 57 Impact Projects) with 132 other projects recently selected for conducting energy audits/feasibilities studies <i>Partially achieved:</i> Cumulative 22.0 kTOE saved from EC projects implemented <i>Partially achieved.</i> Cumulative 84.0 ktonnes CO₂ emission reduction achieved from EC projects implemented to date

- ⇒ Cumbersome approval procedures for obtaining a loan guarantee (Outcome 5.3). A primary complaint of SMEs is the need for SMEs to place collateral (in the order of 25% of the requested loan amount) when applying for a loan guarantee. As an alternative, a number of SMEs either delay their EC investments or obtain loans from the VEPF.
- ⇒ Lack of replication of certain demonstrations. Replication of projects for food processing, textiles and pulp & paper is significantly less than projects from the brick and ceramic sectors. This shown on Table 2. Reasons for this lack of replication includes:
- the lack of visibility of the EC&EE measures taken in the demonstration;
 - the time required to demonstrate significant energy savings to textile mills; and
 - the textile and pulp and paper sectors generally being marginally profitable, and hence, not as open to EC&EE investments as other industrial sectors.

Table 2: Summary of Demonstration and Replication Projects

Sector	No. of DEMO	No. of REPL	No. of IMPA ¹²	Total	TOE Saving to 30 Sept/08 (tonne)*	CO ₂ Reduction (to 30 Sept/08 (tonne)*	Actual Investment (USD)****
Brick	2	25	34	61	16,830	63,763	4,585,785
Ceramics	2	20	13	35	3,618	13,832	477,358
Food-processing	2	13	1	16	353	1,565	90,386
Textile	2	3	9	14	629	2,411	101,828
Paper	2	6	0	8	609	2,463	327,400
Total	10	67	57	134	22,039**	84,035***	5,582,758

* Cumulative savings and emission reduction from EC projects implemented up to September 2008. The cumulative figures reflect energy savings or CO₂ reductions starting from the commencement of PECSME to the date indicated

** Equivalent to 16% of current approved target of 136.1 kTOE

*** Equivalent to 8.7% of current approved target of 84.0 ktonne CO_{2eq}

**** Only investments of DEMO and Replication projects included.

- ⇒ Certain project targets appear unattainable. There are project targets that should be adjusted to reflect more realistic targets including:
- Cumulative GHG reductions by the end of PECSME in 2010 should be reduced from 962 ktonnes to 537 ktonnes of CO_{2eq}. This would be more realistic since the GHG reductions for the ceramics sector and the food processing, pulp & paper and textile sectors (due to poor replication) are less than anticipated; and
 - Number of energy audits and/or feasibility studies to be completed by the end of PECSME should be reduced to 250 (from 500). With only 87 completed to date, another 413 studies and audits would need to be reviewed by PECSME over the next 2 years. A reduction to 250 is recommended to fit with available PECSME time and resources.

¹² IMPA means impact projects or projects that were aware of the demonstration but did not use PECSME assistance for development

2.1.2 Project Impacts

The Project to date has made significant impacts on SMEs and EC&EE projects in Vietnam:

- Assistance in the drafting of the EC law that will be promulgated in 2009 by the GoV;
- Raising awareness for and training SMEs and EESPs on the benefits and technical details of EC&EE projects;
- Supporting EESPs in providing services to SMEs for implementing EC&EE projects;
- Successful setup of a loan guarantee fund for SMEs. Other attempts to setup similar funds in Vietnam have failed;
- Successful demonstration and dissemination of an LPG kiln for the ceramics industry and the VSBK for the brick industry.

Details of the impact of the PECSME on the ceramics industry in the Bat Trang Ceramics village is provided in Box 1.

Box 1 Demonstration and Replication of LPG Kilns for Ceramics Industry, Bat Trang Ceramics Village

Bat Trang Ceramics village is located 13 km southeast of Hanoi along the left banks of the Red River. For over 1,000 years, the area has been a major producer of ceramics with a reputation for producing excellent quality ceramic products. During the 16th century, the community gradually shifted to the manufacture of decorative ceramics. Wood biomass was the preferred source of fuel for the industry until the 1970s when there was a realization that this practice was causing deforestation. During the 1975-1985 period, coal was used for ceramics in Bat Trang in open pits where energy efficiencies were in the order of 7%. There are anecdotes of a different environmental condition during this period including warmer temperatures and poor air quality.

In 1995, there were an estimated 1000 ceramics kilns fired by coal. The first LPG kiln for ceramics in Bat Trang was in 1995 by Huynh Huong Ceramics. The LPG kiln was imported from Japan for US\$35,000 for a 1.0 m³ kiln, a hefty sum for most ceramics businesses. The impact of this kiln was a demonstration of the effectiveness of a closed kiln. From 1996 to 2006, an estimated 200 ceramic businesses built their own LPG kilns, none of them with the same efficiency of the Japanese kiln. Likely for proprietary reasons, none of the information amongst the different kiln owners was shared; it is noteworthy that many of these 200 kiln owners are not classified as SMEs. Today, there are still 600 open coal kilns operating in Bat Trang.

In 2004, Mr. Le Duc Trong successfully developed an LPG kiln for the ceramics industry as well as design a system for reusing excess heat from the LPG kiln for drying purposes. Mr. Trong's design allowed GoV with the assistance of PECSME, to set technical standards for the purposes of transforming the ceramics kilns of Bat Trang. Once again, Huynh Huong Ceramics provided the efficient LPG kiln demonstration.

Today, there is a very high demand for LPG kilns in the cost range of US\$20,000 to \$50,000. Since the Huynh Huong demonstration in early 2007, over 30 LPG kilns have been installed. There are also over 40 SMEs applying for financing and supply of an LPG kiln in Bat Trang. PECSME was able to train and promote Mr. Trong and his colleagues as energy service providers (ESPs) to the various ceramics SMEs. Mr. Trong is currently servicing more than 70 ceramics SMEs throughout Vietnam to convert to LPG.

The success of the Huynh Huong Ceramics LPG kiln demonstration was due to the PECSMEs ability to demonstrate reduced energy consumption and operating costs, significant improvements on product quality and production efficiency and the location of the demonstration within a ceramics community, where the comprehension of the benefits of LPG kilns are better understood.

Source: Personal communication with Office of the People's Committee of Bat Trang, September 17, 2008.

GHG emission reduction impacts have been calculated for the PECSME using the methodologies suggested by the “Manual for Calculating GHG Benefits of GEF Projects: Energy Efficiency and Renewable Energy Projects, April 16, 2008 (GEF/C.33/Inf.18)”, CDM Executive Board methodologies (AMS II.D., Version: 11 for brick and ceramic sectors, AM0036 for boilers in the pulp & paper, textile, and food processing sectors), and grid emissions factor used to estimate the Vietnamese electricity grid of 0.43 tCO₂/MWh. An adjusted grid emissions factor of 0.6 kg CO₂/kWh is recommended to reflect the actual grid emissions depending on the time of day and the prevailing generation source for electricity; this is further discussed in Section 6 under Recommendation 6.

Table 3 summarizes these GHG reductions. The GHG reductions are calculated from GHG reductions during PECSME and for a 10-year period after the completion of PECSME. This follows the guidelines as set in “Manual for Calculating GHG Benefits of GEF Projects: Energy Efficiency and Renewable Energy Projects, April 16, 2008 (GEF/C.33/Inf.18)”.

Table 3: Summary of CO₂ Reductions from the Project

Direct emission reduction ¹³ due to sectoral demonstration projects, t CO ₂	
Bricks	93,446
Ceramics	2,073
Food Processing	775
Textiles	516
Pulp and Paper	3,590
Total direct emission reduction, t CO₂	98,248
Direct post-project emission reduction ¹⁴ due to replication projects, t CO ₂	
Bricks	506,465
Ceramics	143,602
Food Processing	12,653
Textiles	8,053
Pulp and Paper	23,275
Total direct post-project emission reduction, t CO₂	694,049
Indirect emission reduction ¹⁵ due to impact projects, t CO ₂	
Bricks	247,362
Ceramics	4,857
Food Processing	1,120
Textiles	2,221
Pulp and Paper	0
Indirect emission reduction, t CO₂	255,561
TOTAL EMISSION REDUCTIONS DUE TO UNDP-GEF PROJECT, t CO₂ (10-yr cumulative after completion of PECSME, up to 2020)	1,047,858

¹³ Direct impacts can be considered for all 6 demonstration projects in brick, ceramic and pulp and paper sectors over a period of 10 years (due to kiln, LPG oven and boiler service life being greater than 10 years); 5 years for food processing and textiles (due to 5-year service life of various lighting fixtures). The period of 10 years is recommended by GEF manual or less depending on service life of EC intervention.

¹⁴ Due to the investments supported by mechanisms (e.g., loan guarantee fund) that will continue to operate a minimum of 5 years after the end of PECSME.

¹⁵ Indirect emissions are from “Impact” projects developed with knowledge of PECSME demonstrations but without PECSME assistance

While the impact to the Project can be potentially significant, the evaluator has noted:

- Stakeholder frustration over the complexities of obtaining a loan guarantee;
- Minimal replication impact over EC initiatives in the textile and pulp & paper sectors; and
- A need for the PMU to re-focus its efforts on ensuring sustainability of the project.

2.2 Project Design and Relevance

2.2.1 Project Relevance and Country Drivenness

The Project targets its assistance to the SME sector that accounts for over 25% of the GDP of Vietnam. Moreover, the SME sector accounts for 25% of the country's GDP and an estimated 26% of its employment. In general, the SME inability to reduce its energy consumption is due mainly to its lack of awareness of EC opportunities and its general inability to access finance (due to the sector's general lack of collateral). As such, the SME sector is unable to make the necessary investments to improve their products as well as reduce their energy consumption.

The GoV has been trying to assist SMEs since the early 1990s due to their economic potential. With the recent hikes of imported fuel into Vietnam, the country has targeted all sectors of the economy to adopt EC practices. The GoV has promulgated a number of policies targeting EC as well as being supportive of removing financial barriers to SMEs as detailed in Section

This Project is relevant to Vietnam's developmental priorities of energy conservation, raising the standards of SME operations and minimizing the need to import energy from neighboring countries. As such, country ownership and drivenness for this Project is strong.

2.2.2 Project Design and Implementation Approach

Project design is strong as it provides a number of support mechanisms for SMEs to implement various EC measures. This is significant in that the design fully recognized the technical challenges to SMEs in the baseline scenario, and the design providing training and awareness raising as the first activities required for implementation. Though this is not an evaluation of the PDF B Phase of the Project, the project appears to be well prepared.

The Project has implemented and achieved a number of objectives to its mid-point. This is remarkable in that most of the targets that were set were attained. In this regard, the implementation approaches of the Project were strong and included:

- Project startup concurrent with:
 - dialogue with government on the legal and regulatory framework;
 - raising awareness and building capacity of SMEs on EC opportunities for their businesses;
 - assessing training needs and designing training delivery mechanisms;
 - preparing feasibility studies for demonstration projects; and
 - operationalizing the LGF.

- Study tours in both Years 1 and 2 for policy makers;
- Completion of 10 demonstration projects in Year 2 covering all targeted sectors;
- Supporting awareness activities for new government policies on labeling, technology transfer, and EC&EE incentives;
- Training for SMEs, EESPs, ESCOs and government coordinators on technical aspects of EC measures, energy audits and implementation of EC measures;
- Startup of the LGF early in Year 2.

While there have been numerous achievements on the Project in line with the log-frame, there are a number of operational and design issues that require adjustment to improve the efficiency and impact of project delivery:

- ⇒ Notwithstanding the considerable effort that has been placed into training of a wide range of stakeholders, there appears to be limited capacity to develop EC projects for SMEs that would meet PECSME targets of 500 projects. The evaluator notes that there are sound fundamentals in place for sustaining this program the development of EC projects including trained ESP personnel, available financing and the drafting of an EC law to be passed in 2009. However, with the time remaining on the project, an adjustment of PECSME targets based on the current scenarios may be required. This may involve either reducing the target number of EC projects or increasing training capacity to increase the pool of EESPs and ESCOs that can assist SMEs in EC project development;
- ⇒ SME applications for loan guarantees are below target levels due to cumbersome procedures of obtaining loan guarantees and high interest rate of borrowing. Adjustments in the use of the LGF mechanism is required to stimulate SME interest in borrowing for implementing EC measures. This would include simplified procedures for obtaining loan guarantees and reducing monthly payments for SMEs;
- ⇒ Replication of ceramic and brick sectors projects have been more successful than demonstrations for pulp and paper, food processing and textiles. As such, more promotional efforts will be required to maximize the replication potential for the pulp and paper, textile and food processing sectors. This would include strengthening regional ECCs and EESPs in the identification and development of replication projects in these sectors.

2.3 Project Implementation Arrangements

2.3.1 Stakeholder Involvement, Linkages to Project and Other Interventions in Sector

The evaluator concludes that the UNDP/GEF PMU is well-connected with relevant stakeholders and tries to find synergy with other EC&EE projects. This includes:

- Vietnam National Energy Efficiency Program (VNEEP) – PECSME contributes to the MoIT-administered VNEEP efforts on promoting EC&EE standards, and guiding documents for laws and decrees related to EC&EE (Outcome 1.2);
- Vietnam Energy Efficiency Public Lighting Project (VEEPLP) has similar project components. Due to its narrow scope in public lighting, GHG reductions are expected

to be less than 200 ktonnes CO₂ cumulative on the project timeframe. Similar to PECSME, the VEEPLP is also funded by the GEF and managed by UNDP;

- The WB-GEF funded Project: Commercial Energy Efficiency Programme (CEEP) administered by the MoIT. The synergy between this project and PECSME is the complementarity of their respective training programs; CEEPs training focuses on business skills while PECSME training focuses on technical issues and is tailored to the specific industrial sectors;
- Vietnam Environment Protection Fund (VEPF) – VEPF (administered by MoNRE) is promoting the use of the PECSME LFG to catalyse borrowing for EC&EE projects.
- MoNRE – PECSME contributes to MoNRE efforts on GHG emission standards...
- MoST – PECSME contributes to MoST efforts on promoting EC&EE technology transfer and application through providing technical assistance. This includes a list of EC&EE technologies on a list of technologies to be used on the MoST Fund for Technology Transfer Promotion;
- MoPI – PECSME contributes to MoPI efforts on inclusion of EC&EE activities as a part of the National SME Development Promotion Program.

2.3.2 Management, Monitoring and Evaluation, Identification and Management of Risk

PIRs have provided documentation to identify and manage Project risks. Project personnel appear diligent in identification of risks in all PIRs. It is noted, however, that the original 2004 log-frame of PECSME is lengthy and requires some re-wording to increase its effectiveness as a monitoring tool. The evaluator notes that some adjustments have already been made in the various versions of the APRs and PIRs with the latest version being the August 2008 PIR. On Table 1, the Evaluator has made some suggested edits; for example, “project strategy” has been adjusted to reflect “project outcomes”. These edits were intended to assist the PMU in tracking progress, and to conform to log-frames on other GEF projects.

Management and coordination of PECSME has been satisfactory notwithstanding the ambitious targets set in the Prodoc. Examples include the numerous reports supplied to the evaluator that cover project plans, gap analyses for policy, training needs assessments, design of the LGF, baseline scenarios for the demonstration projects, component mid-term evaluations, study tour outcomes, training effectiveness, and implementation reports for demonstration projects.

Due to the increasing complexity of tracking progress notably with respect to over 100 replication projects, a review of the monitoring system is required that should result in a new information management system for the Project. The current management information system (MIS) is based on an Excel spreadsheet platform that is not user-friendly for timely data entry and production of reports.

Hence, the purposes of a management review are to:

- find the means to optimize the outputs of the PMU;

- provide relief to their heavy workloads that are likely to increase towards the conclusion of PECSME; and
- provide the PMU the opportunity to adaptively manage the Project based on recent project results and stakeholder demands.

2.4 Project Budget and Cost Effectiveness

Table 4 presents an overview of expenditures of the GEF contribution to the budget. Expenditures until September 15, 2008 were an estimated US\$2.78 million. PECSME disbursements were 72% in 2006 and 92% in 2007 of AWP targets. Considering the achievements of the Project, the disbursements have been effective to the extent that they have been there are some extra funds which can be used for additional training, an anticipated future need of the project funds.

Table 5 presents a summary of PECSME co-financing. PECSME co-financing is equivalent to US\$8.13 million, 35% of the proposed committed co-finance for PECSME. The distribution of co-financing contributors between the GoV, VietinBank, the private sector and the Vietnam Environment Protection Fund provides a good indicator of the wide level of support being received for the Project.

Table 4: Project Budget and Expenditures for 2006-2008

Activity	2006	2007	2008 (up to Sept 15/08)	Total Disbursed	Total Planned for Project	Total Remaining
Activity 1- EC&EE Policy and Institutional Support Development Program	48,470.64	69,703.18	84,347.60	202,521.42	330,913.18	128,391.76
Activity 2- EC&EE Communication and Awareness Program	84,717.43	97,225.01	141,732.29	323,674.73	501,283.10	177,608.37
Activity 3- EC&EE Technical Capacity Development Program	44,209.82	111,705.61	48,177.50	204,092.93	447,361.50	243,268.57
Activity 4- Energy Efficiency Services Provision Support	0.00	43,625.58	185,934.99	229,560.57	399,362.50	169,801.93
Activity 5- EC&EE Financing Support Program	335,134.74	713,665.53	37,393.33	1,086,193.60	2,214,683.99	1,128,490.39
Activity 6- EC&EE Technology Demonstration	53,017.91	54,153.83	128,207.88	235,379.62	637,430.16	402,050.54
Activity 7- Management	192,265.73	166,734.72	116,967.39	475,967.84	848,601.07	372,633.23
Activity 8- Monitoring and Evaluation	16,426.58	5,665.08	2,120.00	24,211.66	89,364.50	65,152.84
Totals:	774,242.85	1,262,478.54	744,880.98	2,781,602.37	5,469,000.00	2,687,397.63

Table 5: Co-Financing and Leveraged Resources

Co financing (Type/ Source)	IA own Financing (mill US\$)		Multi-lateral Agencies (Non-GEF) (mill US\$)		Bilateral Donors (mill US\$)		Central Government (mill US\$)		Local Government (mill US\$)		Private Sector (mill US\$)		NGOs (mill US\$)		Total Financing (mill US\$)		Total Disbursement (mill US\$)	
	Pro- posed	Actual	Pro- posed	Actual	Pro- posed	Actual	Pro- posed	Actual	Pro- posed	Actual	Pro- posed	Actual	Pro- posed	Actual	Pro- posed	Actual	Pro- posed	Actual
Grant															0	0	0	0
Credits															0	0	0	0
Loans							1.00	0.17 ²⁸			18.10	0.50			19.10	0.67	0	0
Equity							0.60	0.38	1.00	0.47	1.00	5.88	0.50	0.43 ²⁹	0	0	3.10	7.16
In-kind							0.50	0.20	0.60	0.11					0	0	1.10	0.31
Non-grant Instruments															0	0	0	0
Other Types															0	0	0	0
TOTAL							2.10	0.75	1.60	0.58	19.10	6.38	0.50	0.43	19.10	0.67	4.20	7.47

²⁸ These are loans from VEPF and VietinBank²⁹ Includes cash contribution from HUT

2.4.1 Evaluation of Project

Table 6 provides an evaluation of the current outcomes of each Project output. Each output was evaluated against individual criterion of:

- *Relevance* – the extent to which the activity is suited to local and national development priorities and organizational policies, including changes over time.
- *Effectiveness* – the extent to which an objective has been achieved or how likely it is to be achieved.
- *Efficiency* – the extent to which results have been delivered with the least costly resources possible.
- *Results/impacts* – the positive and negative, and foreseen and unforeseen, changes to and effects produced by a development intervention. In GEF terms, results include direct project outputs, short-to medium term outcomes, and longer-term impact including global environmental benefits, replication effects and other, local effects.
- *Sustainability* – the likely ability of an intervention to continue to deliver benefits for an extended period of time after completion. Projects need to be environmentally as well as financially and socially sustainable.

The Project outputs were rated based on the following scale:

- *Highly Satisfactory (HS)*: The project has no shortcomings in the achievement of its objectives;
- *Satisfactory (S)*: The project has minor shortcomings in the achievement of its objectives;
- *Moderately Satisfactory (MS)*: The project has moderate shortcomings in the achievement of its objectives;
- *Moderately Unsatisfactory (MU)*: The project has significant shortcomings in the achievement of its objectives;
- *Unsatisfactory (U)*: The project has major shortcomings in the achievement of its objectives;
- *Highly Unsatisfactory (HU)*: The project has severe shortcomings in the achievement of its objectives.

The overall rating of the project in terms of project progress is S, mainly due to the attainment of a number of targets set in the Prodoc with a need for adjustments to various design and implementation issues.

Table 6: Evaluation of Project Activities and Outputs (as of September 2008)

Project Outcome	Relevance	Efficiency	Effectiveness	Results / Impacts	Overall Rating
Outcome 1: Improved EC&EE policy and Institutional capacity	HS	HS	HS	HS	HS
Outcome 1.1: Improved EC&EE awareness and capacity on EC&EE policy development within the GoV	HS	HS	HS	HS	HS
Outcome 1.2: Incentive policies for supporting EC&EE Investment in SMEs developed	HS	HS	HS	S	HS
Outcome 1.3: Technical assistance provided to SMEPC and SMEDD to incorporate EC&EE programs into the National SME Development Support Program	HS	HS	HS	HS	HS
Outcome 1.4: EC&EE coordinating agencies in the SME sector and provincial technical support networks are established and operational	HS	HS	HS	HS	HS
Outcome 1.5: MoNRE capacity is improved in modifying environmental standards related to GHG emissions	S	Unable to rate	Unable to rate	Unable to rate	Unable to rate
Outcome 2: Enhanced SME and public awareness of EC&EE	HS	HS	HS	HS	HS
Outcome 2.1: Communications strategy developed	HS	HS	HS	HS	HS
Outcome 2.2: Information dissemination network established and the capacity of organizations involved in information network strengthened	HS	HS	HS	HS	HS
Outcome 2.3: Awareness of SME and general public on EC&EE assessed Recommendation made to eliminate this outcome	Unable to rate	Unable to rate	Unable to rate	Unable to rate	Unable to rate
Outcome 2.4: SME Energy-Use database developed	HS	HS	HS	HS	HS
Outcome 2.5: EC&EE information disseminated to SMEs through the network	HS	HS	HS	HS	HS
Outcome 2.6: EC&EE advocacy and awareness campaign completed Recommended change: Re-word outcome to: "Public awareness enhanced through completion of EC&EE advocacy campaigns"	HS	HS	HS	HS	HS

Table 6: Evaluation of Project Activities and Outputs (as of September 2008)

Project Outcome	Relevance	Efficiency	Effectiveness	Results / Impacts	Overall Rating
Outcome 2.7: SMEs registered for receiving technical assistance for implementing EE&EC projects	HS	HS	HS	HS	HS
Outcome 3: SME and EESP capacity has been enhanced to implement EE&EC projects.	HS	HS	S	S	S
Outcome 3.1: Training for trainers provided	HS	S	S	S	S
Outcome 3.2: SME training courses conducted Recommended change: Re-word to “SME knowledge improved on the benefits of EC&EE”	HS	HS	HS	HS	HS
Outcome 3.3: Sustainable EC&EE training programs developed for relevant universities and colleges Recommendation made to eliminate this outcome	Unable to rate	Unable to rate	Unable to rate	Unable to rate	Unable to rate
Outcome 3.4: Training program has been monitored and evaluated Recommendation made to eliminate this outcome	Unable to rate	Unable to rate	Unable to rate	Unable to rate	Unable to rate
Outcome 3.5: Energy audits of selected SMEs completed Recommended change: Re-word to “Capacity to conduct energy audits is strengthened”	HS	HS	HS	HS	HS
Outcome 4: Growth of competitive and sustainable EE services provision industry through enhanced business, engineering and financial skills of EESPs	HS	S	S	S	S
Outcome 4.1: EESP training program completed	HS	HS	S	S	HS
Outcome 4.2: Suitable institutional and legal framework developed for EESP activities	HS	MS	Unable to rate	Unable to rate	Unable to rate
Outcome 4.3: Project assistance has been provided for EESP operations	HS	S	HS	S	S
Outcome 4.4: Standardized contracts to deliver EESP services to SMEs completed and executed	HS	S	S	S	S
Outcome 4.5: Assessment of local capabilities for EE equipment supply completed	HS	S	S	HS	S
Outcome 4.6: Energy performance of industrial equipment evaluated	HS	S	Unable to rate	Unable to rate	Unable to rate

Table 6: Evaluation of Project Activities and Outputs (as of September 2008)

Project Outcome	Relevance	Efficiency	Effectiveness	Results / Impacts	Overall Rating
Outcome 4.7: Technical capacity of local equipment manufacturers and fabricators enhanced	HS	S	Unable to rate	Unable to rate	Unable to rate
Outcome 4.8: Design of a Sustainable EC&EE Research and Development Program	S	Unable to rate	Unable to rate	Unable to rate	Unable to rate
Outcome 5: Increase financial system willingness to lend to SME for EC&EE Projects through enhanced knowledge of EC and skills in evaluating loan application	HS	S	S	S	S
Outcome 5.1: Increased banking and finance sector awareness of the benefits of EC&EE projects	HS	S	HS	S	S
Outcome 5.2: Improved SME access financing for EC&EE Projects	HS	HS	HS	HS	HS
Outcome 5.3: Mobilisation of a loan guarantee funding mechanism	HS	HS	S	S	S
Outcome 5.4: Mobilization of Vietinbank's Loan Program <i>Recommended Change: Change outcome to "Replication projects funded by financial institutions"</i>	HS	HS	S	S	S
Outcome 5.5: Provision of additional TA and funding for EC&EE investments <i>Recommended change: Remove this outcome as it would be combined with Outcome 5.4</i>	Unable to rate	Unable to rate	Unable to rate	Unable to rate	Unable to rate
Outcome 5.6: Established financing mechanisms evaluated <i>Recommended Change: Remove this project outcome.</i>	Unable to rate	Unable to rate	Unable to rate	Unable to rate	Unable to rate
Outcome 6: Increased credibility of EC&EE through successfully implemented and evaluated demonstration projects	HS	HS	S	S	S
Outcome 6.1: Completed thorough techno-economic feasibility analyses of potential EC&EE investment projects	HS	HS	HS	HS	HS
Outcome 6.2: Demonstration requirements identified and evaluated	HS	HS	HS	HS	HS
Outcome 6.3: Demonstration project barriers identified and removed	HS	HS	HS	HS	HS
Outcome 6.4: Baseline data for demonstration sites collected	HS	HS	HS	HS	HS

Table 6: Evaluation of Project Activities and Outputs (as of September 2008)

Project Outcome	Relevance	Efficiency	Effectiveness	Results / Impacts	Overall Rating
Outcome 6.5: Demonstration projects implemented	HS	HS	S	S	HS
Outcome 6.6: Demonstration projects experiences shared with other stakeholders	HS	HS	S	S	HS
Outcome 6.7: Technical assistance for implementation of 500 EC&EE investments provided	S	S	S	S	S
Monitoring and Evaluation	HS	S	S	HS	S
Overall Rating					S

2.5 Sustainability and Replicability

2.5.1 Sustainability

In assessing the sustainability of the project, we asked “how likely will ‘immediate Project objectives’ (from the 2004 Prodoc) be sustained after termination of the Project”. Sustainability of these objectives was evaluated in the context of financial resources, socio-political risks, institutional framework and governance and environmental factors, using a simple ranking scheme:

- *Likely (L)*: very likely to continue and resources in place;
- *Moderately Likely (ML)*: model is viable, but funding or resources may not be in place;
- *Moderately Unlikely (MU)*: model is not viable or needs changing; and/or resources not in place; and
- *Unlikely (U)*: model is not viable and resources are not in place

The sustainability of PECSME is rated as ML (moderately sustainable) due mainly to a lack of confirmed financial resources to continue activities in a post-project environment. The evaluation of each component is shown on Table 7. It is important to note that the index is simply to facilitate an assessment of future sustainability and is not a rating of the PMU and their consultants. Instead, it is a rating of the project design and viability going forward, including availability of budget and resources for continuation.

Table 7: Assessment of Sustainability for Objectives

Intended Outcome	Assessment of Sustainability	Dimensions of Sustainability
<p>Outcome 1: Improved EC&EE policy and Institutional capacity through:</p> <ul style="list-style-type: none"> • improved GoV awareness and capacity on EE& EC issues • development of supporting EE&EC incentive policies • provision of TA to support national SME development programs • establishing operational network of coordinating SME agencies • improved MoNRE capacity to modify standards related to GHG emissions 	<ul style="list-style-type: none"> • <i>Financial Resources:</i> Energy conservation has been a GoV priority since the 1990s. As such, the GoV is likely very willing to sustain its allocation of funding resources to their own EC projects to the extent possible with their resources. The VEPF is an example of this willingness. However, this may not be sufficient unless additional resources from other donors are made available; • <i>Socio-Political Risks:</i> The GoV is likely to remain driven to continue with EC and EE initiatives as they envisage growing demand for electricity in Vietnam and the fact that EC is one of the most economical ways of adding power to the grid; • <i>Institutional Framework and Governance:</i> The anticipated passing of an EC law in 2009 and the legal framework for the EESP industry provide an excellent basis for the GoV to continue supporting EE & EC; • <i>Environmental Factors:</i> Environmental impacts of EC and EE activities are benign and would be supported by the GoV <p style="text-align: right;">Overall Rating</p>	<p style="text-align: center;">L</p>
<p>Outcome 2: Enhanced SME and public awareness of EC&EE through:</p> <ul style="list-style-type: none"> • The development of a communications strategy • Establishment of an information dissemination network • Database for SME energy use developed • EE&EC information disseminated through network • EE&EC advocacy campaign completed • SMEs registered for TA to implement EE & EC projects 	<ul style="list-style-type: none"> • <i>Financial Resources:</i> Continuance of awareness activities after the project is complete will largely depend on available financial resources which at this time is likely through limited GoV funding • <i>Socio-Political Risks:</i> Several NGOs are leading EE & EC awareness activities in various provinces that are likely to be sustained; • <i>Institutional Framework and Governance:</i> The anticipated passing of an EC law in 2009 provides an excellent basis for continued stakeholder awareness raising of EE & EC; • <i>Environmental Factors:</i> Environmental impacts of EC and EE activities are benign and would be supported by SMEs. <p style="text-align: right;">Overall Rating</p>	<p style="text-align: center;">ML</p> <p style="text-align: center;">L</p> <p style="text-align: center;">L</p> <p style="text-align: center;">L</p> <p style="text-align: center;">ML</p>
<p>Outcome 3: SME and EESP capacity has been enhanced to implement EE&EC projects through</p> <ul style="list-style-type: none"> • Training of trainers for EE&EC • Training for SMEs • Development of sustainable EE&EC training programs in universities and colleges • Energy audits on selected SMEs completed 	<ul style="list-style-type: none"> • <i>Financial Resources:</i> Training of SMEs and EESPs will be sustained through sectors that generate sufficient energy savings such as the ceramic and brick sectors. Other sectors such as textiles will require external financial support to sustain EC in their sectors; • <i>Socio-Political Risks:</i> Most SMEs and EESPs will want energy audits primarily if it can generate sufficient cost savings and earnings. There is a risk of a loss of interest in EC for less profitable sectors. This will likely require GoV support for continued EC in those sectors for which there is currently no certainty; • <i>Institutional Framework and Governance:</i> The anticipated passing of an EC law in 2009 provides an excellent basis for continued strengthening of SME and EESP capacity in profitable EC activities. The GoV will likely support EC in less profitable sector; however, the extent of this support is questionable given the high level of effort required to achieve EC and EE in textiles or the pulp and paper 	<p style="text-align: center;">ML</p> <p style="text-align: center;">ML</p> <p style="text-align: center;">ML</p>

Table 7: Assessment of Sustainability for Objectives

Intended Outcome	Assessment of Sustainability	Dimensions of Sustainability
<p>Outcome 6: Increased credibility of EC&EE through successfully implemented and evaluated demonstration projects through:</p> <ul style="list-style-type: none"> • Completed thorough techno-economic feasibility analyses of potential EC&EE investment projects • Identification and evaluation of demonstration requirements • Identification and removal of demonstration project barriers • Collection of baseline data for demonstration sites • Sharing demonstration projects experiences with other stakeholders • Provision of TA to implement 500 EC&EE investments 	<ul style="list-style-type: none"> • <i>Financial Resources:</i> All demonstration projects will generate financial benefits. However, the profitable ceramic and brick sectors will generate more interest from their demonstrations. Interest in energy savings from textiles, food processing and pulp and paper will need a “push” from the provincial ECCs to sustain the interest of the relevant SMEs to invest time and funds to implement EC activities; • <i>Socio-Political Risks:</i> Unlike the ceramic and brick sectors, there is less sustained interest in the textile, food processing and pulp and paper SMEs to implement replication. This is partly due to these sectors generally being marginally profitable, and SMEs not having the time to increase their knowledge of EC&EE. GoV regional coordinators will be required to find additional resources (human and fiscal) to continue EC activities in these sectors as well as and increase effective outreach to SMEs. They will require external assistance in this regard; • <i>Institutional Framework and Governance:</i> The anticipated passing of an EC law in 2009 provides an excellent basis for continuation of demonstration activities which may be required to increase the effectiveness of demonstrations for the less profitable sectors. The GoV will likely support EC in these sectors; however, the extent of this support is questionable given the high level of effort required to achieve EC&EE in textiles, food processing or the pulp and paper sectors. The provincial ECCs will play an important role in promotion of EC&EE in these sectors; • <i>Environmental Factors:</i> Environmental impacts of EC and EE activities are benign and would be the primary force behind the additional demonstrations. <p>Overall Rating</p>	<p>ML</p> <p>ML L (for ceramic and brick sectors) ML (for other sectors)</p> <p>ML</p> <p>L</p> <p>ML</p>

There are issues concerning the sustainability of the LGF mechanism as currently designed. Currently, there are only 13 loan guarantees against the LGF with complaints about the complex procedures to apply for the guarantee including the borrower having to place collateral valued at 25% of the loan amount requested. *The Project will need to propose streamlining loan guarantee application procedures including waiving the guarantee of only 75% of the requested loan.*

2.5.2 Replicability

PECSME success is primarily measured on the rate of demonstration project replication. The rate of replication reflects successful outcomes of the other project components that would support SME investments into EE & EC including policy development, awareness of EC & EE activities, availability of financial support and technical assistance. Replication of demonstration projects, however, is limited to those sectors that generate sufficient energy savings and increase profitability. A short assessment of the replication of each of the PECSME demonstration sectors is presented below:

- *Brick sector.* Replication of EE brick kilns has been successful. There has been an investment of over US\$4.5 million into 27 EE demonstration and replication brick kilns (mostly VSBKs) that have been constructed since the VSBKs were demonstrated in early 2007 in Phu Tho province in the North and Binh Duong Province in the South (northwest of HCMC). Replication and impact projects have been well supported by the emergence of EESP service companies, brick field entrepreneurs being enthusiastic about the actual energy savings of the VSBK, the improvements in the brick quality and the improved rate of brick production; and by additional funding for VSBKs that has been made available by the National Environmental Fund in the form of a soft loan provision and local governments in the form of subsidies¹⁸;
- *Ceramic sector.* Replication and impact projects have been successful in the ceramics sector that includes a US\$0.48 million investment for over 22 LPG kilns. Reasons for this success includes well-managed demonstration projects, good dissemination activities, stakeholder recognition of improved production and profitability, and the availability of finance (either through various SME banking schemes or equity). This was noteworthy in Bat Trang (see Box 1) where more than 30 LPG kilns have been installed since the successful demonstration of 2007;
- *Pulp and paper sector.* Main interventions appear to be the installation of efficient boilers and steam recovery. The demonstration project in HCMC at the Thien Tri Company has had some exposure for replication purposes. The pulp and paper entrepreneurs interviewed expressed fears of sharing their EC experiences with others, possibly due to issues related to tax evasion or proprietary knowledge. As such, technical knowledge of EC&EE investments in pulp and paper is likely not readily shared with other SMEs stunting its replication potential; a total of 6 replication projects have been implemented in this sector, less than the 25 and 20 replication projects in the brick and ceramic sectors respectively. The provincial ECCs will play a pivotal role in promoting EC&EE in this sector;
- *Food processing.* An EC demonstration at the Nhat Hoang Food Processing Company in Danang consisted of a number of smaller less visible measures including efficient lighting, and steam recovery. The regional EC coordinator in Danang has had limited success in replication of these EC measures partly due to the host demonstration company being unwilling to fully share its EC experiences with other SMEs. Furthermore, visitors are deemed to be disruptive to production lines, and hence, are discouraged from viewing the EC measures. Similar to pulp and paper, ECCs will play a pivotal role in promoting EC&EE in this sector. A total of 12 replication projects have been implemented in this sector;
- *Textiles.* An EC demonstration in Hanoi at the Tin Thanh Textile Company consisted of a number of very small measures including efficient lighting, use of natural lighting through roofing modifications, and use of capacitors to regulate current into older motors. The potentially most visible measure, steam recovery from a textile steam machine, was not installed due to lack of available space in the factory. Furthermore, there were issues regarding the measurement of the actual energy saved from these

¹⁸ Local government subsidies differ between provinces; Binh Duong province provided for each VSBK VND 30 million (USD 1,800) while the local government of Hai Duong provided a subsidy of only VND 7 million (USD 420) for each VSBK.

measures. As a consequence, the demonstration lacked the “visibility” required to generate replication and investment interest. As a result, a number of textile SMEs are likely using their own funds to implement EC measures as indicated by the number of replication projects (3) and number of impact projects (9). There are efforts underway, however, through a prominent textile association to facilitate EC&EE investments amongst textile SMEs.

3. CONCLUSIONS AND RECOMMENDATIONS

3.1 Conclusions

Main **achievements** of the project as of September 2008 have been:

- Project involvement with drafting of energy conservation laws and policies that promote EC&EE investments; these should provide the basis for increased SME involvement in EC activities in Vietnam. The Draft Law of Energy Conservation and Efficient Use is designed to encourage intensive energy end-users to appropriately manage the energy consumption and report the impact of the EC measures to GoV. The draft EC Law provides incentives measures such as tax rebates for promoting EC equipment purchases. In addition, the Draft EC Law stipulates the establishment of an Energy Conservation Fund by the GoV to provide direct support to EC initiatives. Passing of the law is anticipated in 2009 or 2010;
- Successful setup of supporting information networks with DoST for SMEs and energy service providers (EESPs) in 20 out of 64 provinces in Vietnam. This includes:
 - appointment of provincial coordinators who manage the overall EC program under DoST and to assist them in setting sectoral priorities for ECCs to pursue with SMEs;
 - the setup of 20 provincially administered “Energy Conservation Centers” ECCs/TTCs with personnel to identify EC opportunities for SMEs within a particular provincial area;
 - the emergence of individual persons who are energy efficiency service providers (EESPs) in various provincial centers who specialize in providing technical assistance to SMEs for EC initiatives. In larger centers, some of these EESPs have formed or are operating energy service companies (ESCOs) that are providing EC services to larger companies and SMEs..
- Delivery of training programs for EESPs and SMEs on planning, designing, financing and implementing EC projects. These have been delivered as planned to improve their knowledge base of EC issues for priority SME industrial sectors;
- Delivery of energy services by PECSME-trained EESPs to SMEs and lending institutions. Services have been delivered to SMEs to assess feasibility of EC projects and conduct energy audits, EC measures implementation support, and to lending institutions and SMEs’ owners for the preparation of bankable documents, including the feasibility studies;
- Setup of an operational loan guarantee fund for SMEs and EESPs to raise financing for EC&EE projects. SMEs now have access to loan finance through commercial banks (eg. VietinBank) or government funds (VEPF) that are 75% guaranteed by the Project’s Loan Guarantee Fund (LGF);

- Setup of demonstration projects for SMEs in the ceramic, brick, textile, food processing and pulp and paper sectors. These were all completed in 2007 although to varying degrees of success.

The most important **conclusions** drawn from this MTE mission includes:

- There are a number of incentive-based laws, policies and government incentive programs that serve as good starting points to accelerate SME adoption of EC measures. This includes 30% subsidies in some provinces for VSBKs from the National Environmental Fund from the Local Science and Technology Fund, concessional borrowing rates and tax exemptions;
- Replication of demonstration projects has had varying degrees of success. This is mainly due to the nature of the EC measures proposed, and to some extent, the inherent protective nature of the sector possibly related to proprietary or taxation issues. The actual replication of the demonstration projects for each sector indicates that EC adoption (or transformation) for each sector will be achieved through differing approaches. This includes self-sustaining transformation or demand driven (as is the case for the ceramic and brick sectors) to government promotion of EC measures (as is the case with textiles sector);
- The limited number of qualified EESPs in Vietnam will limit the number of new SME-EC projects per year. To increase the rate of rapid adoption of EC measures by SMEs, the pool of qualified EESPs will need to grow. Moreover, the new EESPs will need to be substantially competent with technical and financial issues related to EC financing and implementation in the 5 industrial sectors under PECSME;
- Many of the EESPs will be working with new and upcoming ESCO business model. These ESCOs will employ persons familiar with EC work; they are generally from the ECCs and various technical institutes such as Hanoi University of Technology (HUT). The GoV has strategies to migrate state employees from government positions (such as the provincial ECCs) to the private sector (i.e. ESCOs). The transition from a public sector to private sector working environment can be difficult. To increase the chances of these ESCOs to succeed in the private sector, assistance to these ESCOs should be provided in the areas of business development and management;
- The PMU has performed at a high level in implementing the Project. The evaluator has also observed that senior PMU management work extremely hard to meet reporting deadlines and project targets; however, their work loads reduce their valuable time to strategize or plan for future activities. With increasing work loads anticipated for the remaining period of PECSME, the PMU are in need of measures to reduce their work load. This would include more sophisticated tools to track progress, notably for replication projects which are scattered throughout Vietnam;
- The Project log-frame requires revisions to reflect ongoing GEF migration towards outcome or impact reporting. The current version of the log-frame is basically an action plan with the key indicators, and needs revision to reflect intended outcomes of each activity that conform with general GEF formats for log-frames. Moreover, some

activities will need to be removed as they are basic evaluation activities of the various components.

Project ***sustainability is moderately likely*** given the current incentive-based policies in place, the information sharing network, ongoing training, SME financing and the setup of demonstration projects, but with the need to confirm that finances will be in place to continue Project activities after the completion of PECSME. Moreover, Project sustainability can be enhanced:

- if there is a clear vision of the post-PECSME scenario including:
 - the use of LGF funds after PECSME is complete. There is currently no commitment from Vietinbank or the GoV on the existence of the LGF after PECSME is complete. As such, questions will linger as what financial instrument will be available to SMEs to finance EC initiatives after PECSME is complete;
 - other financial instruments that can be mobilized for EC activities such as CDM funds for the brick and ceramic sectors;
- through a focused training program (to be implemented between now and the end of PECSME) to address the needs of EESPs and ESCOs after the project is completed. The content of the type of training program will need to be guided by the aforementioned vision of the post-PECSME scenario, and would likely include business training for ESCO personnel who are from ESCOs or technological institutes.

Replication of EC measures will be sustained if:

- there is sufficient demand by the SMEs; energy savings would be substantial, and the new technologies would provide improved productivity, improved quality of final products and increased profitability. This has been most evident in the brick and ceramic sectors;
- EC opportunities are presented in a coherent manner to SMEs by ECCs and TTCs. ECCs and EESPs need to work in close consultation with SMEs to efficiently present clear solutions and benefits, especially in the textile, food processing and pulp and paper sectors;
- there is growth in the number of qualified EESPs to develop the EC opportunity.

3.2 Recommendations

The following recommendations are provided in an approximate order of importance to the project:

Recommendation 1: The Project should resolve issues to ensure there are loan guarantees for SMEs after the completion of the project. Currently, there appear to be two courses of action for PECSME:

- Work with the relevant government agencies (MoST, MoPI and MoF) on their commitment to have the LGF continue to serve as the loan guarantor. In a post-project scenario, MoST would replace PECSME in the administration of the LGF applications and provide the necessary technical assistance; and
- Work with relevant government agencies at the provincial level on commencing a pilot “Energy Performance Contract” (EPC)¹⁹. At least to the knowledge of the Evaluator, the EPC business model is unique in Vietnam and is a means of spreading risk to both the financial lending institute and a competent ESCO. PECSME can provide technical assistance or the initial capital towards setup of the pilot scheme using a portion of available LGF funds (roughly US\$250,000).

By implementing one or both courses of action, a basis can be established on which to provide more focused capacity building programs for the remainder of PECSME. Assuming PECSME implements either or both courses of action, PECSME will need to provide technical assistance and capacity building support as described in Recommendation 2.

Recommendation 2: Revise PECSME training approach to assist EESPs to adapt to the envisioned post-project business environment scenario. Using the limited PECSME budget available, PECSMEs training approach should be adjusted to respond to the needs of the post-project business environment. Since most EESPs are now competent “generalists” in the area of energy conservation, they are only able to provide a certain level of service to most SMEs and financial institutions/fund managers. For these EESPs to evolve to a higher level of competence and to increase their marketability, the training approach will need to foster the development of “champions”, from both a technical and business perspective. As such, the revised training approaches:

- should incorporate more specialization and improving EESP skills to provide improved services to the financial sector. Suggested areas of specialization includes thermal engineering for boilers, thermal engineering for bricks and ceramics, energy efficient lighting, and financing;
- will need to determine locations of where certain sectoral skills are required. For example, Binh Duong Province is a logical choice for developing a brick EESP champion;
- will need to identify individuals who can become champions in each sector:
 - the ceramic sector in Bat Trang already has a qualified candidate for development into a ceramics champion;
 - the brick sector already has two qualified candidates for becoming brick champions;

¹⁹ An energy performance contract is undertaken by an ESCO to implement EC measures for an SME, in return for monthly payments from the SME based on energy saved. ESCO funding to undertake EC measures comes from an open guarantee from a commercial bank such as Vietinbank or from the VEPF (soft loan). To lower the financial risk and maximize efficiency of the program in terms of implementing EC projects, the maximum payback period for an SME is 2 years, preferably 12 to 18 months.

- for the textile, pulp and paper and food processing sectors, there are capable EESPs currently functioning as private ESCOs within these sectors in the HCMC area for EC technical assistance only.

If a pilot EPC is implemented, PECSME should:

- develop the EPC pilot scheme through these “champions” wherever possible or appropriate. This can lead to the outcome of an effective demonstration of a new EC business model in Vietnam that can be replicated by newcomers or ECCs shifting from SoE entities to a private sector company;
- continue to provide training that accelerates market transformation of EC services with other EESPs, including the aforementioned training approaches towards specialization;
- provide advanced business training to participating ESCOs related to formulation and execution of EPCs; and
- provide technical assistance that strengthens the institutional and legal framework of EPCs with a model that reduces risks for the lending institution and the ESCO. This would include assignment of liabilities to the ESCO, lender and the SME.

Recommendation 3: Provide additional support to promote demonstration projects in the textile, food processing and pulp and paper sectors.

The demonstration projects of these sectors has not resulted in larger-scale replication. Additional support to ECCs and provincial DoST coordinators will be required for awareness and technical assistance to promote EC in these sectors. In some cases such as the textile sector, working through the appropriate industry association could be a vehicle for promoting EC projects. If the industry association and government officials jointly conduct promotional and TA work, technology adoption would be more effective as a stronger message would be conveyed to SMEs on the importance of EC measures in Vietnam. Another solution is to implement an EPC (see Recommendation 1) for EC investments in the textile, food processing and pulp & paper industrial sectors; these sectors are, as a rule, not cost-intensive, and would have a short payback period if implemented through an EPC.

Recommendation 4: Amend conditions for obtaining loan guarantees from the LGF by:

- Guaranteeing 100% of the requested loan covered by the LGF. Current conditions for SMEs applying for a loan guarantee from the LGF include the SME having to raise their own collateral equivalent to 25% of the requested loan amount. If this condition was waived, an outcome of more SMEs requesting loans through the LGF is more likely. Moreover, the risks of waiving this condition are offset by the fact that there are currently no repayment issues of loans approved against the LGF, as indicated by Project records. In addition, the LGF will likely receive more requests for loan guarantees from the brick and ceramic sectors; these sectors are under better financial condition than the textile and pulp and paper sectors;
- raise the LGF ceiling from 2.0 billion VND to 5.0 billion VND. Rationale for this recommendation comes from the rising costs of EC projects over the last 2 years, and the need to include larger projects in the LGF portfolio; and

- transfer US\$250,000 from the LGF to provide additional training or knowledge transfers for EESPs and SMEs on the LGF and other financial issues related to EC implementation. This is being presented as a means to support of Recommendation 2 for additional training support on LGF financing issues, and responds to several concerns amongst stakeholders, especially Vietinbank, of the need for improved understanding amongst SMEs of this financial instrument. The risk of lowering the LGF by US\$250,000 is low given that the LGF will still be able to cover an equivalent of 80 replication projects (assuming an average replication project cost of US\$43,000). The transferred budget provision will be useful to additional activities such as training in the preparation of bankable documents, introducing a new business model such as the EPC approach and project bundling in the brick making and ceramic sectors under future carbon trade programs to be launched by the World Bank and other multi-lateral organizations.

Recommendation 5: Facilitate preparations for a CDM project in the ceramic and brick sectors. The Project is in a unique situation to facilitate the formation of an entity or selection of an existing entity to prepare and manage a CDM project. With the Project's technical knowledge of these sectors, its stakeholder network and its linkages to multilateral assistance for soft support, an effort should be made to ensure CDM revenue can support the continuation of market transformation in the brick and ceramics sectors. Preparations can include:

- determining baseline and appropriate CDM methodology to estimate CER generation;
- institutional arrangements for designing and managing the project and distributing CDM revenue streams;
- determining PECSMEs role in facilitating CDM preparations.

Recommendation 6: Re-assess methodology used to calculate electricity-based GHG emission reductions through the use of "marginal grid emission factors". Current estimation methods used by the Project for grid emissions is based on a grid emissions factor that is averaged, notwithstanding the different energy sources used during different times during the day. The use of a marginal emissions grid factor will provide a more precise determination of the actual grid emissions at a particular time of day based on generation sources. PECSME at this time is likely underreporting GHG emissions from its activities.

An example of the differences between GHG reporting using the average and marginal emission factors would be the use of efficient lighting in the food processing and textile sectors. With the efficient lighting used during the daytime operations, GHG savings are estimated using an average grid factor of 0.43 kg CO₂/kWh or the average of daytime generation (being a combination of hydro and fossil fuels) and nighttime generation (hydro only). A more realistic GHG reduction would account for the daytime grid emissions factor of more than 0.6 kg CO₂/kWh based on reduction of grid power consumption from fossil fuels.

Recommendation 7: PECSME will need to invest some resources to improve efficiencies in project monitoring. The aim of this recommendation is to reduce the workload of the PMU to the extent that they can focus on adaptively managing the project.

This recommendation also makes the assumption that the workload during the second half of PECSME will increase; any increase in PECSME workload will result in an increased risk that the PMU cannot manage the project in a manner similar to its past high performance. Specifics of this recommendation include:

- an assessment of how to setup an information management system that can be queried for project progress, and produce progress reports efficiently for PMU reporting requirements as already outlined in the M&E Guidelines issued in May by the PMU in 2008;
- discussions with PMU staff and other users of the database as to the design of the database structure (using the current Excel spreadsheet). The design should ensure ease and relevance of data entry, relevant query functions, and reporting formats;
- ensure database design compatibility with database software. The software platform is likely to be Microsoft Access and its compatibility with other Microsoft software; and
- training for PMU staff on the use of the information management system, related software and best practices of continuous monitoring and evaluation.

Recommendation 8: Reset log-frame targets and outcomes to reflect relevant and realistic targets. Some of the success indicators or targets in the original log-frame are not attainable or have become irrelevant from changes in the work plans. These targets were set in 2004 under a different environment, and with considerably less information than is currently available on the Project today. Furthermore, the log-frame is written in terms of work plan strategies and not outcomes as is the case with many other GEF project log-frames.

As such, the log-frame success indicators need to be updated and strategies of the log-frame converted to intended outcomes of PECSME. Examples of specific target and outcomes that require review or have been reviewed include:

- cumulative GHG reductions and energy savings for the entire project. GHG savings for example, were lower for all sectors except for the brick sector;
- the 500 energy audits and/or feasibility studies to be completed by the end of the Project. This may need to be reduced since there are insufficient resources to complete 500 audits/studies;
- 60 and 80 replication projects financed by the Vietinbank Loan Program and other additional funds respectively. Combining these numbers into one target is recommended;
- an outcome of developing EE&EC training programs for colleges and universities. The PMU have recommended removal of this outcome;
- evaluation activities of each assessment that have their own success indicators. These should be removed as they are project activities and not outcomes of the project.

If the PMU feels the targets are not attainable, the target numbers should be reset. The Evaluator has also provided suggested “outcomes” to replace “strategies” in the original log-frame. These can be found on in the Evaluation Report on Table 1 in the main report.

3.3 Lessons Learned

Key lessons from this Project include:

- Identifying and establishing close collaboration with key stakeholders and partners is crucial to the success of any project. From the commencement of PECSME, the PMU has emphasized the importance of strong involvement of many decentralized governmental bodies such as DoST, ECCs, academic institutes, NGOs, local and national associations for SMEs and manufacturers;
- Project replication is dependent on being able to effectively and clearly demonstrate EC&EE benefits and raise the confidence of SMEs to the extent that they want to duplicate the EC&EE project. In the case of the demonstration projects in the brick and ceramics sector, substantial benefits to the entrepreneurs were demonstrated with improved product quality and production rates and lower production costs; this resulted in replication of these projects. In contrast, benefits of the textile sector only demonstrated lower energy costs which were not as significant making it more difficult to incentivize textile owners to adopt EC measures;
- Project replication is enhanced if it can be demonstrated in an area easily accessible to interested SMEs. In the case of the ceramics sector, a highly successful demonstration was conducted in Bat Trang ceramics village, easily accessible to over 400 ceramic entrepreneurs. In contrast, the textile, pulp and paper and food processing demonstrations were located amongst other industries with the entrepreneur reluctant to provide full access to other SMEs on the EC&EE measures being undertaken. As such, more effort was required to replicate these projects.

Appendix A – Mission Terms of Reference for Project Mid-Term Evaluation

Project title:	PIMS 2057 CC FSP: Vietnam Promoting Energy Conservation in Small and Medium Enterprises
Project ID:	00045088
Implementing Partner:	Ministry of Science and Technology (MOST)
Duration of the Assignment:	20 working days during 1 September - 30 October 2008
Duty Location:	Hanoi (Viet Nam) with in-country travel to project sites

1. Introduction

1.1. Country Context

Since early 2000, the government has paid attention to reducing the pressure on energy supply by issuing the Government Decree 102/2003 to set foundation for energy conservation and energy efficiency (EC&EE). Later, the government invested in the 2006-2013 National Targeted Programme on Energy Saving and Energy Efficiency, of which energy efficient in industrial sector is one important aspect.

UNDP aims to help the Government of Viet Nam to meet this challenge by helping to build GOV capacity to effectively conserve its scarce energy resources and make economic growth more efficient while fulfilling country's obligations as a signatory to global multilateral environmental convention agreements (MEAs).

1.2. Project Summary

The PECSME project is a joint initiative of the Global Environment Facility (GEF), the United Nations Development Programme (UNDP), the Government of Vietnam and a number of partners involved in the selected priority industrial sectors. The goal of the project is the reduction in the annual growth rate of GHG emissions from the five selected SME sectors through widespread and sustained improvement in energy use. The project purpose is the removal of identified barriers to the widespread uptake of energy conservation technologies, improved management focus on reducing energy costs, enhanced technician training in energy conservation practices and improved operation of energy using equipment.

The project comprises an integrated set of activities designed to address in a holistic fashion the identified barriers to widespread utilization of energy efficient management practices, operations and technologies in Small and Medium Enterprise (SME) sectors in Vietnam.

SMEs are a key target for energy conservation in Vietnam as they now account for 95% of enterprises, provide 26% of employment, contribute up to 25% GDP and are expected to fuel Vietnam's future employment growth. The five key SME sectors being addressed in the project are brick, ceramics, textiles, paper and food processing. The project will take the results of ten carefully

targeted demonstration projects in the five SME sectors and apply them to a pipeline of 500 projects to be implemented during the project lifetime.

It is estimated that by the end of PECSME project, that the successful implementation of the project will result in the cumulative energy saving of 136.1 KTOE and the cumulative CO₂ annual emission reduction of 962.0 ktonnes during the period 2006-2010.

Total project expected cost is USD 28.769 million with USD 5.469 million of GEF financing and USD 23.3 million from Vietnamese counterparts, including USD 19.1 million from the business sector (financial institutions, manufacturers and SMEs). Government ministries and agencies fund the difference. The GEF funding includes a provision of USD 1.950 million for providing a loan guarantee support to selected SMEs. The loan guarantee facility is explicitly designed to be self-sustaining beyond the end of the project.

1.3 Project Expected Outcomes and Outputs

The PECSME project is expected to reach its goals of GHG emission reduction and EC targets by producing six major outcomes as follows:

- Outcome 1: Improvement of EC&EE Awareness and Building Capacity on EC&EE Policy Development aiming to increase impact of existing policies and the recently enacted EC&EE decree through strengthened capacity of relevant government Ministries, Departments and Agencies in effective policy and institutional design, guidance, implementation and enforcement of energy conservation measures.
- Outcome 2: Implementation of an adapted Communications Strategy with the aim of Enhancing SME and public awareness of EC&EE through an integrated communications system including information collection, dissemination and reporting.
- Outcome 3: Development and Enhancement of EC/EE Technical Capacity with the aim of Improving technical and financial skills in EC&EE implementation through a comprehensive training plan.
- Outcome 4: Development of EC/EE Technical support and services fostering of a competitive, high quality and sustainable energy efficiency services offer in Vietnam.
- Outcome 5: Development of banking and financial sector's awareness of benefits of EE/EC investments and willingness to finance SMEs through a better understanding of EE projects and by providing a loan guarantee, if needs be.
- Outcome 6 : Demonstration of techno-economic feasibility of EC/EE projects with the aim of increasing credibility of EC&EE investments through successfully implemented and evaluated demonstration and replication projects.

The project should achieve these outcomes by supporting an integrated set of six component programs comprising: (1) Policy and institutional support development; (2) Communications and awareness; (3) Technical capacity development; (4) Energy efficiency services provision support; (5) Financing support; and (6) Demonstrations.

2. Project Status

While the conception of the project dates back to 2004, the project was formally launched in October 2005 (Prodoc signature) but started in the field by the Inception Workshop in January 2006. The project expected duration is 5 years and should end in October 2010.

All project components (related to Outcomes 1 to 6 above mentioned) are under way even some activities have been launched in late in regards of the initial planning: training program (Component 3) is under way of final completion up to 2009; technical support to Energy Efficiency Service Providers (EESPs) (Component 4) for improving EC/EE and projects implementation involves several EESPs working as sub-contractors; the financial support (Component 5) is operational for providing the requested loan guarantee, and all demonstration projects (10) are already completed (part of Component 6). Other soft components related to Outcomes 1 and 2 are ongoing.

The 2008 Annual Work Plan has been approved in early January 2008 and all planned activities are in progress. The challenge the project is currently facing is, among other related to the implementation of 500 replication projects (second part of Component 6).

3. Objectives of the Mid-Term Evaluation

The Monitoring and Evaluation Policy at the project level in UNDP/GEF has two overarching objectives:

- a) Promote accountability for the achievement of GEF objectives through the assessment of results, effectiveness, processes and performance of the partners involved in GEF activities. GEF results will be monitored and evaluated for their contribution to global environmental benefits; and
- b) Promote learning, feedback and knowledge sharing on results and lessons learned among the GEF and its partners, as basis for decision-making on policies, strategies, program management, and projects and so to improve knowledge and performance.

The evaluation is to be undertaken in accordance with the “GEF Monitoring and Evaluation Policy”(see <http://thegef.org/MonitoringandEvaluation/MEPoliciesProcedures/mepoliciesprocedures.html>).

The Mid-Term Evaluation is intended to assess the relevance, performance, results, management arrangements, and the overall achievement of the project. It looks at signs of potential impact and sustainability of results, including the contribution to capacity development and the achievement of global and national environmental goals.

The evaluation should provide evidence-based information that is credible, reliable and useful, enabling the timely incorporation of findings, recommendations and lessons into the decision-making processes.

The Mid Term Evaluation will be coordinated by the UNDP Viet Nam and supported by the Project Management Unit. The Mid Term evaluation will determine progress being made towards objectives and will identify the required adjustments or improvements, if needs be. The Evaluator should include in his/her report all needed recommendations and lessons learnt related to MTE main findings with the aim of improving the project performance and of delivering the final outputs towards project objectives.

4. Scope of the Mid Term Evaluation

The scope of the MTE covers the entire UNDP/GEF-funded PECSME project and its components. It aims to evaluate the project implementation taking into account the actual status of the project activities, related outputs and the resource disbursements made up to date. The evaluation will involve analysis at two levels:

- Components level, and
- Project level.

4.1 Component level

At the Component level, the evaluation will determine the **relevance, effectiveness, efficiency and impacts** of activities/components design, implementation, management, and monitoring of evaluation. Any issue or factor that has impeded or accelerated the implementation of any of its components, including actions taken and adjustments made should be analyzed and highlighted. On the component level, the following key aspects shall be evaluated:

4.1.1 The overall integration of the different Project components to make that all synergies and utilized

- How is the level of coherence and effective inter-linkage and communication between and among project components in term of sharing information and supporting each other towards achievement of the project objectives?
- Has there been any overlapping or synergy among activities which could make the implementation more efficient?

4.1.2 Appropriateness of Key Project Indicators (KPI)

- Are outcome performance indicators and targets specific, measurable, achievable, reasonable and timebound?
- To what extent are the performance measurement indicators useful for dealing with issue of quality management of the outputs and outcomes?
- To what extent shall the performance measurement indicators be improved or adjusted for a better and more useful monitoring and evaluation continuous process?

4.1.3 Effectiveness of the Project Monitoring and Evaluation Process

- How effective is the project monitoring and evaluation process to ensure the relevance and effectiveness of the activities and expected results in relation to TORs (RFPs) issued, different levels of work plans (QWP and AWP), and the required outputs quality criteria?
- Review the appropriateness and the actual use of tools the project laid out for monitoring and evaluating the progress of activities and to assess the project outputs and outcomes in term of technical quality, timeliness, and user's expectations.
- To what extent is the M&E procedure used by project manager and component coordinators to monitor and assess the actual progress of activities and resulting outputs and outcomes over the planned periods?

4.1.4 Effectiveness utilization of deliverables from project partners/stakeholders to achieve the component outputs and project impacts

- Are the consultants/subcontractors/service providers engaged in project implementation suitably qualified, experienced and skilled to perform assigned responsibilities?
- Did the project management apply appropriate basic/standard rules/criteria to select currently engaged consultants/subcontractors?
- How does quality of the completed output meet the expectation of the project (quality criteria, scope of work, schedule)

4.1.5 Effective information sharing within the PMU and towards the UNDP country office

- Assess the means and tools the PMU has implemented for establishing timely and effective relationship and communication between project component coordinators in such a way sub-activities are tightly synchronized, data, lessons learned and best practices are appropriately shared.
- To what extent is the UNDP CO adequately informed and is in a position for getting access to updated information in regards to components implementation schedule, deliverables from subcontractors, major outputs, impacts and delays or other pitfalls the PMU encounters in the course of the components implementation?

4.1.6 Design and Project Components Appropriateness

- To what extent is the set of originally designed components in accordance with the project objectives and do the adjustments made from that time relevant to the project overall approach?
- Point out any changes the Project made in components design and/or expected outputs/outcomes. Assess how do they affect the achievement of the whole project outcomes and targets?

4.2 Project level

On the project level, the evaluation will focus among other, on four priority topics²⁰ in regards to project performance:

- (a) Progress towards objectives, achievement of results, targets set for the entire project.
- (b) Factors affecting successful implementation and achievement of results.
- (c) Project Management framework, arrangement and performance,
- (d) Strategic partnerships, and
- (e) Project budget management.

4.2.1 Progress towards achievement of results

- Is the Project making satisfactory progress in achieving project outputs vis-à-vis the overall and immediate targets and in accordance with related inputs and activities

²⁰ **Note:** not all of the five criteria need to be systematically reviewed in all aspects of project performance

undertaken? Review of the mid-term actual results with reference to the approved targets in terms of: (i) number of SMEs currently benefiting and other SMEs already identified into the EC/EE projects pipeline; (ii) energy savings and GHG emission reduction (over the project timeframe) resulting from the EC projects already implemented; (iii) number of provinces with the new EC technology in place.

- Given the level of achievement of outputs and related inputs and activities to date, is the Project likely to achieve its Immediate Purpose and Development Objectives and its overall targets (EC, GHG and number of SMEs)?
- Are there critical issues relating to the achievement of project results that have been pending which would need immediate attention and/or action in the second half of the project implementation timeframe (up to 2010).
- In accordance with results got until now, are the project partners/stakeholders able, available and in a position to provide quality and in time inputs to achieve results within the remaining time until 2010?

4.2.2 Factors affecting successful implementation and achievement of results

Analysis should focus on factors beyond the Project's immediate control or project-design factors that influence the project outcomes and results:

- Are there any outstanding issues, unexpected obstacles, bottlenecks, etc... from the energy end-users, government policy, business and financial sectors that could affect or jeopardize the successful implementation and achievement of project results on time and in accordance with expectations? As an instance, to what extent the current economic context in Vietnam, especially the issue related to interest rate in Vietnam, could have an impact on SMEs' EC project investment decision making process and the use of the LGF?
- To what extent does the broader policy environment conducive to achieving expected project results, including existing and planned EE/EC legislations, decrees, regulations, policy guidelines and government priorities?
- Is the project logical framework and design still relevant in the light of the project experience to date? Pinpoint any aspects of the "logframe" that shall be revisited and updated and, if necessary, provide suggestion for timely changes or adjustments to activities and time-bound targets.
- Do the Project's purpose and objectives remain valid and relevant, or are there items or components in the project design that need to be reviewed and updated or simply deleted?
- Are the current institutional and implementation arrangements still relevant and helpful in the achievement of the project's objectives, or are there any institutional concerns that are restrictive to project implementation and progress?

4.2.3 Project management (adaptive management framework)

- *General implementation and project management:* Assess the adequacy and appropriateness of management arrangement in term of well performing the management functions in order to successfully implement a full size project like PECSME.
- *Adequacy of management procedures and organization chart:* Is the project management arrangement appropriate to the extent of management functions, processes and procedures, in accordance with the staff capacities and reasonable workload? Is the

project organization chart efficient for conducting and managing each component, and the whole project on the technical and administrative perspective as well?

- *Evaluate the effectiveness of the project management and reporting system and procedures in terms of:* (i) timeliness of activities reporting and planning on time, (ii) relevance of the quality management plan of major inputs and outputs, (iii) appropriateness of implementation of M&E plan and its internalization by the project component coordinators in conducting their activities. To what extent do the M&E procedures provide sufficient basis for evaluating performance and decision making at the activity and outcome levels? How has the APR/PIR process helped in monitoring and evaluating the project implementation and achievement of results?
- *Likely Risks assessment and mitigation:* does the project take into consideration the likely implementation risks in preparing the annual work plan and quarterly work plans with the aim of mitigating the impacts that could result from unexpected situation or change in the project environment? Review and discuss the risks originally identified in the project document and, the ones currently highlighted in preparing the AWP & QWP. Assess the actual usefulness and timeliness of the original project logical framework and work plans as management tools and in meeting with UNDP-GEF requirements related to planning and reporting activities.
- Assess the use of electronic information and communication technologies in the implementation and management of the project within the project team and through project partners.

4.2.4 Strategic partnerships (project positioning and leveraging)

- *Resource mobilization:* has the current project management strategy exploited all opportunities for strengthening collaboration and substantive partnerships with other government bodies, institutes, different associations, other donors, financial sector and other investment funds with the aim of maximizing project's achievement of immediate results and extending the project impacts in the long run beyond the end of the project timeframe (2010)?
- *Feedback from partners and relevant stakeholders:* Are the project implementation planning information, actual results status, and other priority concerns (e.g. : like implementation risks assessment) disseminated on time and on a regular intervals to priority project partners? Are there areas to improve in the partnership mechanisms for making more efficient the communication link and the timely information dissemination and partners' feedback related to priority topics and concerns?

4.2.5 Project Budget Management

- *Disbursement calendar:* Assess how activities were implemented against financial disbursement planning. How were the budget provisions allocated, the timeliness of disbursements and calendar, and the compliance of the procurement schedule (services and equipment).
- On the project disbursement, report on the actual project costs (disbursement per Component – Table below).

Actual Budget Status in USD at the end of Q2 2008

Planned 3.4 Activities	Actual Accomplishment (%) NOTE 1	Budget		
		As per Project Document for the whole project	Actual Disbursements	Actual vs. Project Budget Planning (%)
Project Component 1				
Project Component 2				
Project Component 3				
Project Component 4				
Project Component 5				
Project Component 6				
Project Component 7				
TOTAL				

Finally, the Evaluation Report will present recommendations and lessons learned that could be helpful for improving the project performance and to reach its general objectives and particular targets in regards of GHG emission reduction, energy savings, and the number of EC replication projects.

5. EVALUATION METHODOLOGY

5.1. General

The MTE Consultant is expected to become familiar to the project objectives, historical developments, institutional and management mechanisms, activities and updated status of accomplishments. In order to make an evaluation of the project towards requirements mentioned in the Section 4, the MTE is expected collect and analyze relevant information through:

- Review of original project documents and other documents related to PECSME and EE&EC program and policy in Viet Nam;
- Group and individual interviews with project managers/officers and Senior Technical Advisors, component coordinators, relevant stakeholders, and at the least representatives of the project partners and beneficiaries, and
- Project demonstration sites visits.

The analysis of the information should enable the Evaluator to make evidence-based assessment of the priority topics mentioned in the Scope. **For all topics mentioned in Section 4**, the MTE Evaluator must provide the rating as described below. The rating must be supported by concrete evidence, e.g. narrative justification, data and statistics.

Definition of rating the project performance:

- **Highly Satisfactory (HS):** there were no shortcomings
- **Satisfactory (S):** there were minor shortcomings
- **Moderately Satisfactory (MS):** there are moderate shortcomings
- **Moderately Unsatisfactory (MU):** there were significant shortcomings
- **Unsatisfactory (U):** there were major shortcomings

- **Highly Unsatisfactory (HU):** there were severe shortcomings

5.2 Evaluation Process

An outline of an evaluation approach is provided below; however it should be made clear that the evaluator is responsible for revising the proposed approach as necessary. Any changes should be in-line with international criteria and professional norms and standards (as adopted by the UN Evaluation Group – Annex 3). They must be also cleared by UNDP before being applied by the Evaluator.

The evaluation must provide evidence-based information that is credible, reliable and useful. It must be easily understood by project partners and recommendations must be applicable to the remaining period of project duration.

In essence, the evaluation will be mainly supported by the following documents:

- PECSME Project documents and Inception Report (2005)
- Annual Work Plan (AWP 2006, 2007 and 2008) Quarterly Work Plan (Q1-Q2-Q3 2008), QPR (Q1-Q2 2008)
- Annual Project Progress Reports/Project Implementation Reports for Year 2006, 2007
- Budget planning and updated disbursements tables
- Guideline for Selection and Implementation of EC&EE project
- Loan Guarantee Agreement
- List of final technical outputs per component and sample of documents (Walkthrough Audit reports, Energy Audits reports, Feasibility Studies, Implementation reports, and Verification reports), if needs be.
- Demo Program evaluation report (2008)
- Financial Mechanism (LGF) Evaluation Report
- Other relevant documents the Evaluator may consider useful for evidence-based assessment.

The evaluator is expected to follow a participatory and consultative approach ensuring close involvement from the government counterparts (MOST) and relevant project partners. As an instance, the Evaluator should be required to conduct interviews and meeting with selected stakeholders including, the NPD and UNDP PO, the Project Manager, PECSME National and International Senior Technical Advisor, project component coordinators(4), director of selected DOST and selected ESEPs, Incombank HQ LGF manager, selected SMEs' manager including site visits and representative of Association of Small and Medium Enterprises in Vietnam and other EC fund managers like the Environment Protection Funds or others, if needs be.

The methodology used by the evaluator should be presented in detail in the evaluation report. The report shall also include in appendices information related to:

- List of documentation reviewed;
- List and timetable of interviews and site visits;
- Questionnaires (if needs be);
- Terms of Reference of MTE

Although the Evaluator should feel free to discuss with the authorities concerned, all matters relevant to its assignment, it is not authorized to make any commitment or statement on behalf of UNDP or GEF or the project management.

The Evaluator should reflect sound accounting procedures and be prudent in using the resources of the evaluation.

6. DELIVERABLES

The output of the mission will be the **Evaluation Report**. Preferably the length of the Report should not exceed 30 pages in total (not including the annexes). The report should be submitted with quality that meet the evaluation quality standards provided with this TOR.

The Evaluator is required to prepare the followings documents:

- ⇒ Mission agenda
- ⇒ Questionnaires, if needs be
- ⇒ Mission Main Findings Report, by the end of his (her) site presence;
- ⇒ Draft Report after his (her) site presence
- ⇒ Final Report

A two-week mission to Vietnam including selected project site visits will be conducted.

7. TIMING AND DURATION

The total effort for conducting the evaluation has been estimated to 20 **working days** within the period starting from 1 September to 30 November 2008, according to the following planning:

Preparation (home office – from 1 September to 12 September):

- Collection of and acquaintance with the project document and other relevant materials with information about the project;
- Lay out the detailed evaluation scope and mission agenda (including the methods for data collection and analysis); the agenda should be preferably sent to the UNDP and PMU by September 8 2008. The two-week site presence (working days in the field) should be scheduled from 15 to 26 September 2008.
- The Project Manager will arrange transportation for the consultant; will arrange for translation/interpretation when necessary, and if needs be, the PMU will book and provide the air flight ticket for conducting interviews in HCMC or visiting some selected sites outside Hanoi.
- Communication with the project staff to clarify matters.

Mission to Vietnam (10 working days in Vietnam from 15 to 26 September 2008):

- briefing with the UNDP PO
- briefing with the PMU
- project site(s) visits
- interviews and meetings with stakeholders
- review of additional project documents
- preparation of the mission main findings report, including the preliminary rating of activities, recommendations and lessons learnt
- debriefing with UNDP PO
- debriefing with the NPD and the PMU
- final mission main findings report and recommendations.

Elaboration of the draft report (home office till 13 October 2008):

- Additional desk review
- Completing of the draft report
- Presentation of draft report for comments and suggestions
- Additional information and further clarification with UNDP, project management and project staff;

Elaboration of the final report (home office till October 30):

- Incorporation of comments and additional findings into the draft report
- Finalization of the report.

The draft Evaluation report shall be submitted to UNDP for review **within 10 working days after the mission**. UNDP and the NPD will submit comments and suggestions **within 10 working days** after receiving the draft report.

The final Evaluation Report shall be submitted latest **on 30 October 2008**.

8. REQUIRED QUALIFICATION

The evaluator must be independent from both the project design process and the delivery of assistance within the PECSME framework. The candidates will be evaluated in accordance with the criteria as follows:

- University degree in technical, economics or energy/environment related issues;
- Recent experience with result-based management evaluation methodologies;
- Recent experience in evaluation of international donor driven projects;
- Recognized expertise in the field of energy efficiency and related technologies;
- Familiarity with Energy efficiency in industrial sector;
- Familiarity with energy efficiency policies framework in a context similar to Vietnam;
- Experience with financing mechanisms, financial analysis and evaluating financial viability of energy efficiency programs;
- Work experience in relevant areas for at least 10 years;
- Conceptual thinking and analytical skills;
- Project evaluation experiences within United Nations system or with the GEF will be considered an asset;
- Excellent English communication skills;
- Computer literacy;

If selected, failure to make the above disclosures will be considered just grounds for immediate contract termination, without compensation. In such circumstances, all notes, reports and other documentation produced by the evaluator will be retained by UNDP.

Annex 1

Evaluation Report: Sample Outline (Designed for adaptation to specific project circumstances.)

Executive summary

- **Brief description of project**
- **Context and purpose of the evaluation**
- **Main conclusions, recommendations and lessons learned**

Introduction

- **Purpose of the evaluation**
- **Key issues addressed**
- **Methodology of the evaluation**
- **Structure of the evaluation**

The project(s) and its development context

- **Project start and its duration**
- **Problems that the project seek to address**
- **Immediate and development objectives of the project**
- **Main stakeholders**
- **Results expected**

Evaluation and Conclusions

- **Evaluation at the Component level**
- **Evaluation at the Project level**
- **Conclusion**

Recommendations

- **Corrective actions for the design, implementation pain and calendar, monitoring and evaluation of the project**
- **Actions to follow up or reinforce initial benefits from the project**
- **Proposals for future directions underlining main objectives**

Lessons learned

- **Best and worst practices in addressing issues relating to relevance, performance and success**

Annexes

- **Itinerary**
- **List of persons interviewed**
- **List of documents reviewed**
- **Questionnaire used and summary of results**
- **TOR**

Annex 2: UNDP Evaluation Report Quality Standards²¹

Standard 1: The title page and opening pages should provide key basic information.

1.1 The following information should be easily accessible in the first few pages of the report:

- name of the subject (i.e. activity, programme, policy etc.) being evaluated;
- date;
- table of contents, including annexes;
- name and organization(s) of the evaluators;
- name and address of the organization(s) that commissioned the evaluation.

Standard 2: The evaluation report should contain an Executive Summary.

2.1 An Executive Summary should provide a synopsis of the substantive elements of the evaluation report. To facilitate higher readership, the Executive Summary should be short, two to three pages, and should “stand alone”. The level of information should provide the uninitiated reader with a clear understanding of what was found and recommended and what has been learned from the evaluation.

2.2 The Executive Summary should include:

- a brief description of the subject being evaluated;
- the context, present situation, and description of the subject *vis-à-vis* other related matters;
- the purpose of the evaluation;
- the objectives of the evaluation;
- the intended audience of the report;
- a short description of methodology, including rationale for choice of methodology, data sources used, data collection and analysis methods used, and major limitations;
- the most important findings and conclusions;
- main recommendations.

Standard 3: The subject being evaluated should be clearly described, including the logic model and/or the expected results chain and intended impact, its implementation strategy and key assumptions.

3.1 The evaluation report should clearly describe what the purpose of the subject being evaluated is and how the designers thought it would address the identified problem. Additional important elements include: the importance, scope and scale of the subject being evaluated; a description of the recipients / intended beneficiaries and stakeholders; and budget figures.

²¹ These quality standards are drawn from the UN Evaluation Standards, UNEG, 2005.

3.2 The description of the subject being evaluated should be as short as possible while ensuring that all pertinent information is provided. If additional details are deemed necessary, a description including the logic model can be provided in an annex.

Standard 4: The role and contributions of the UNDP, UN organizations and other stakeholders to the subject being evaluated should be clearly described.

4.1 The report should describe who is involved, their roles and their contributions to the subject being evaluated, including financial resources, in-kind contributions, technical assistance, participation, staff time, training, leadership, advocacy, lobbying, and any contributions from primary stakeholders, such as communities. An attempt should be made to clarify what partners contributed to which outcome.

4.2 Users will want to compare this with who was involved in the evaluation to assess how different points of view were included.

Standard 5: The purpose and context of the evaluation should be described.

5.1 The purpose should discuss why the evaluation is being done, how it will be used and what decisions will be taken after the evaluation is complete. The context should be described in order to provide an understanding of the setting in which the evaluation took place.

Standard 6: The evaluation report should provide an explanation of the evaluation criteria that were used by the evaluators.

6.1 Not all criteria are applicable to every evaluation. The rationale for not using a particular criterion should be explained in the report, as should any limitations in applying the evaluation criteria. Performance standards or benchmarks used in the evaluation should also be described.

6.2 It is important to make the basis of value judgments transparent.

Standard 7: The evaluation report should provide a clear explanation of the evaluation objectives as well as the scope of the evaluation.

7.1 The original objectives of the evaluation should be described, as well as any changes made to the evaluation design.

7.2 The scope of the evaluation should be described, making the coverage of the evaluation explicit. The limits of the evaluation should also be acknowledged.

7.3 The original evaluation questions should be explained, as well as those that were added during the evaluation. These are critical references against which the content of the report ought to be compared to.

7.4 The objectives and scope of the evaluation are also critical references to judge whether the methodology selected and resources allocated were adequate.

Standard 8: The evaluation report should indicate the extent to which gender issues and relevant human rights considerations were incorporated where applicable.

8.1 The evaluation report should include a description of, *inter alia*:

- how gender issues were implemented as a cross-cutting theme in programming, and if the subject being evaluated gave sufficient attention to promote gender equality and gender-sensitivity;
- whether the subject being evaluated paid attention to effects on marginalized, vulnerable and hard-to-reach groups;
- whether the subject being evaluated was informed by human rights treaties and instruments;
- to what extent the subject being evaluated identified the relevant human rights claims and obligations;
- how gaps were identified in the capacity of rights-holders to claim their rights, and of duty-bearers to fulfil their obligations, including an analysis of gender and marginalized and vulnerable groups, and how the design and implementation of the subject being evaluated addressed these gaps;
- how the subject being evaluated monitored and viewed results within this rights framework.

Standard 9: The applied evaluation methodology should be described in a transparent way, including any limitations to the methodology.

9.1 A comprehensive, but not excessive, description of the critical aspects of methodology should be contained in the evaluation report to allow the user(s) of the evaluation to come to their own conclusions about the quality of the data. Any description of the methodology should include:

- data sources;
- description of data collection methods and analysis (including level of precision required for quantitative methods, value scales or coding used for qualitative analysis);
- description of sampling (area and population to be represented, rationale for selection, mechanics of selection, numbers selected out of potential subjects, limitations to sample);
- reference indicators and benchmarks, where relevant (previous indicators, national statistics, etc.);
- evaluation team, including the involvement of individual team members;
- the evaluation plan;
- key limitations.

The annexes should include the following:

- more detail on any of the above;
- data collection instruments (surveys, checklists, etc.);

- system for ensuring data quality through monitoring of data collection and oversight;
- a more detailed discussion of limitations as needed.

Standard 10: The evaluation should give a complete description of stakeholders' participation.

10.1 The level of participation of stakeholders in the evaluation should be described, including the rationale for selecting that particular level. While not all evaluations can be participatory to the same degree, it is important that consideration is given to participation of stakeholders, as such participation is increasingly recognized as a critical factor in the use of conclusions, recommendations and lessons. A human rights-based approach to programming adds emphasis to the participation of primary stakeholders. In many cases, this clearly points to the involvement of people and communities. Also, including certain groups of stakeholders may be necessary for a complete and fair assessment.

Standard 11: The evaluation report should include a discussion of the extent to which the evaluation design included ethical safeguards where appropriate.

11.1 The report should have a good description of ethical considerations, including the rationale behind the evaluation design and the mechanisms to protect participants where appropriate. This includes protection of the confidentiality, dignity, rights and welfare of human subjects, including children, and respect for the values of the beneficiary communities.

Standard 12: In presenting the findings, inputs, outputs, and outcomes / impacts should be measured to the extent possible (or an appropriate rationale given as to why not).

12.1 Findings regarding inputs for the completion of activities or process achievements should be distinguished clearly from outputs, outcomes and impact.

12.2 Outcomes and impacts should include any unintended effects, whether beneficial or harmful. Additionally, any multiplier or downstream effects of the subject being evaluated should be included. To the extent possible, each of these should be measured either quantitatively or qualitatively. In using such measurements, benchmarks should be referred to.

12.3 The report should make a logical distinction in the findings, showing the progression from implementation to results with an appropriate measurement and analysis of the results chain, or a rationale as to why an analysis of results was not provided.

12.4 Data does not need to be presented in full; only data that supports a finding needs to be given, and full data can be put in an annex. Additionally, reports should not segregate findings by data source.

12.5 Findings should cover all of the evaluation objectives and use the data collected.

Standard 13: Analysis should include appropriate discussion of the relative contributions of stakeholders to results.

13.1 Results attributed to the subject being evaluated should be related back to the contributions of different stakeholders. There should be a sense of proportionality between the relative contributions of each, and the results observed. This is an integral element of accountability to partners, donors and primary stakeholders.

13.2 If such an analysis is not included in the report, the reason why it was not done should be clearly indicated. For instance, if an evaluation is done early in the management cycle, results or any link to a stakeholder's contribution may not be found.

Standard 14: Reasons for accomplishments and difficulties of the subject being evaluated, especially constraining and enabling factors, should be identified to the extent possible.

14.1 An evaluation report should go beyond a mere description of implementation and outcomes and include an analysis, based on the findings, of the underlying causes, constraints, strengths on which to build on, and opportunities. External factors contributing to the accomplishments and difficulties should be identified and analysed to the extent possible, including the social, political or environmental situation.

14.2 An explanation of context contributes to the utility and accuracy of the evaluation. An understanding of which external factors contributed to the success or failure of a subject being evaluated helps determine how such factors will affect the future of the subject being evaluated, or whether it could be replicated elsewhere.

Standard 15: Conclusions need to be substantiated by findings consistent with data collected and methodology, and represent insights into identification and/or solutions of important problems or issues.

15.1 Conclusions should add value to the findings. The logic behind conclusions and the correlation to actual findings should be clear.

15.2 Conclusions must focus on issues of significance to the subject being evaluated, determined by the evaluation objectives and the key evaluation questions. Simple conclusions that are already well known and obvious are not useful, and should be avoided.

15.3 Conclusions regarding attribution of results, which are most often tentative, require clear detailing of what is known and what can plausibly be assumed in order to make the logic from findings to conclusions more transparent, and thereby increase the credibility of the conclusions.

Standard 16: Recommendations should be firmly based on evidence and analysis, be relevant and realistic, with priorities for action made clear.

16.1 For accuracy and credibility, recommendations should be the logical implications of the findings and conclusions. Recommendations should also be relevant to the subject being evaluated, the Terms of Reference and the objectives of the evaluation, and should be formulated in a clear and concise manner. Additionally, recommendations should be prioritized to the extent possible.

16.2 Recommendations should state responsibilities and the time frame for their implementation, to the extent possible.

Standard 17: Lessons, when presented, should be generalized beyond the immediate subject being evaluated to indicate what wider relevance they might have.

17.1 Not all evaluations generate lessons. Lessons should only be drawn if they represent contributions to general knowledge. They should be well supported by the findings and conclusions of the evaluation. They may refine or add to commonly accepted lessons, but should not be merely a repetition of common knowledge.

17.2 A good evaluation report has correctly identified lessons that stem logically from the findings, presents an analysis of how they can be applied to different contexts and/or different sectors, and takes into account evidential limitations such as generalizing from single point observations.

Standard 18: Annexes should be complete and relevant.

18.1 Additional supplementary information to the evaluation that should be included in annexes includes:

- list of persons interviewed (if confidentiality allows) and sites visited;
- data collection instruments (copies of questionnaires, surveys, etc.);
- the original Terms of Reference for the evaluation;
- list of abbreviations.

18.2 The annexes increase the usability and the credibility of the report.

Appendix B – Mission Itinerary (for Sept 15-26, 2008)

Time	Meeting/Site Visit	Persons Visited	Location
14 September, SUNDAY			
12:00	Arrival of Mr. Roland Wong, Mid-Term Evaluator in Hanoi		
15 September, MONDAY			
8:30 – 10.00	1. Meeting with UNDP CO team: <ul style="list-style-type: none"> - to discuss on the scope and requirement for the MTE - to arrange logistics for contracts 	Le Van Hung, Louis Philippe Lavoie (PMU)	UNDP Office Phan Boi Chau Street Hanoi
10.30 – 12.00	2. Meeting with the PECSME team at PMU Office: <ul style="list-style-type: none"> - UNDP introduce the MTE Expert to the PMU - MTE Expert discuss with PMU on working schedule, workstation, and communication arrangement and other logistics 	Mr. Giuc (NPD), PMU staff, Le Van Hung	PECSME Office 65B To Hien Thanh Hanoi
12:00 – 13:00	Lunch break		
13.00 – 17.30	3. MTE Expert work at the PECSME Office: <ul style="list-style-type: none"> - Interview PMU Staff (NPD, PM, NSTA, ISTA, coordinators) - Review documents 	All PMU staff	PECSME Office 65B To Hien Thanh Hanoi
16 September, TUESDAY			
8.30 - 10:00	4. Meeting with National Energy Conservation Office (ECO) – Ministry of Industry and Trade (MoIT) <i>Issues: EC&EE policy development and National Energy Conservation Target Program</i>	Mr. Hiep, Deputy Director of Department for Science and Technology, MoIT cum Head of EC Office, Phuong Hoang Kim, Energy Sector Expert	MOIT Office, 54 Hai Ba Trung St Hanoi
10.30-12.00	5. Meeting with Vietnam Industry and Commerce	- Mr. Tran Quoc Binh, Vice	Vietinbank Office

Time	Meeting/Site Visit	Persons Visited	Location
	Bank (VietinBank): <i>Issues:</i> Implementation of Loan Guarantee Fund (LGF) and VietinBank Loan Program for EC&EE projects under PECSME	Director, SME Banking Department, Mr. Nguyen Viet Manh, Deputy General Director, Nguyen Viet Thang, SME Banking Department	108 Tran Hung Dao Hanoi
12:00 – 13:00	Lunch break		
14:00 - 15:30	6. Vietnam Environment Protection Fund (VEPF): <i>Issues:</i> VEPF loan provisions for EC&EE investment projects under PECSME	Mr. Nguyen Nam Phuong, Vice Director of VEPF	VEPF Office 141 Le Duan Hanoi
16:00 – 17:00	7. Meeting with Hanoi University of Technology (HUT): <i>Issues:</i> Training and Demonstration of EC&EE	- Mr. Pham Hoang Luong, Vice President, Research and Graduate Training - Ms. Mai Anh, Deputy Director of Center for Research and Consulting on Management, HUT -other HUT staff	HUT Office No. 1 Dai Co Viet Hanoi
17 September, WEDNESDAY			
8.30 – 9.30	8. Meeting with People' Committee of Bat Trang Village and Bat Trang Joint Stock Company for Ceramic Design and Production (Bat Trang D&P Company) <i>Issues:</i> PECSME's activities implemented in Bat Trang area and the D&P Company's participation	- Mr. Nguyen Van Ao, Chairman of People' Committee of Bat Trang - Mr. Le Duc Trong, Director of D&P Company	Office of People Committee Bat Trang
9.30 – 12.00	9. Visits to DEMO and Replication projects in ceramic sector <i>Issues:</i> <ul style="list-style-type: none"> - Demonstration of EE LPG kiln Technology - LPG kiln technology transfer and application 	- Mr. Le Duc Trong, Director of D&P Company - Owners of visited sites	Bat Trang village

Time	Meeting/Site Visit	Persons Visited	Location
12:00 – 13:00	Lunch break		
14.30 – 15.30	10. Visit Tien Thanh Textile Enterprise	- Mr. Tien Thanh	Ha Tay (northwest of Hanoi)
18:00	Meeting with Demonstration Project Component Evaluator	- Mr. Nguyen Xuan Quang	PECSME Office 65B To Hien Thanh Hanoi
18 September, THURSDAY			
8.30 – 9.30	11. Meeting with Chuong Duong Branch of VietinBank <i>Issues:</i> - Issuing LGF commitment and issues on loan provision from VietinBank Loan Program	- Ms. Lien, Director of Chuong Duong Branch - Ms. Tran Thi Le Nga, Director - Mr. Le Anh Tuan, Credit Official	32/398 Ngoc Lam Str Long Bien District Hanoi
10.00 -11.00	12. Meeting with Vietnam SME Association <i>Issues:</i> - Barriers to EC&EE project for SME.	Mr. Lý Dinh Son, Vice President of Vietnam SME Association	No.12, A Plot Cau Giay Health Center Tran Duy Hung Hanoi
12:00 – 13:00	Lunch break		
13.30 – 15:30	Meeting with LGF Evaluator	Ms. Hien, Ministry of Finance	PECSME Office 65B To Hien Thanh Hanoi
15:30 – 16:30	Meeting with PMU Finance and LGF Coordinator	Ms. Nhan, PMU	PECSME Office 65B To Hien Thanh Hanoi
16:30	Departure to Danang		
19 September, FRIDAY			
8.30 – 10.00	13. Meeting with Department of Science and Technology (DOST) and Energy Conservation Office (ECO) of Danang:	Mr. Huynh Phuoc, Director of DoST Danang	DoST Office No. 51 Ly Tu Trong Danang

Time	Meeting/Site Visit	Persons Visited	Location
	<i>Issues:</i> Local initiatives and policy on EC&EE, Activities of ECO	Mr. Huynh Anh Hoang, Director of ECC Danang Mr. Duong Hoang Van Ban, Head of EC Division	
10.30 – 12.00	14. Visit to Nhat Hoang Seafood – Processing Company (DEMO site) <i>Issues:</i> EC&EE measures/technique	- Mr. Huynh Anh Hoang, Director of ECO Danang - Owner of DEMO site	Danang
12:00 – 13:00	Lunch break		
14.00 – 17.00	15. Site visit to Nguyen Phuc Paper Company (Replication Project): <i>Issues:</i> EC investment project with LGF support	- Mr. Huynh Anh Hoang, Director of ECO Danang, - Owner of DEMO site	Danang
20 September, SATURDAY			
21 September, SUNDAY: Depart for Ho Chi Minh City			
22 September, MONDAY			
9.00 - 10.30	16. Meeting with EnerTEAM: <i>Issues:</i> - Demonstration results (3 DEMO projects) - Energy efficiency service market - Job training activities	Mr. Le Hoang Viet Director of EnerTEAM	No. 273 Dien Bien Phu, District 3 HCMC
10.30 – 12.00	17. Meeting with DoST and ECC of Ho Chi Minh City (HCMC) <i>Issues:</i> - Local initiative & policy on EC&EE - Demonstration & replication projects	Dr. Le Hoai Quoc Deputy Director, DoST of HCMC Mr. Huynh Kim Tuoc Director of ECC	No. 244 Dien Bien Phu, District 3 HCMC

Time	Meeting/Site Visit	Persons Visited	Location
12:00 – 13:00	Lunch break		
14.00 – 17.00	18. Site visit to Thien Tri Paper Company (Demonstration project)	Mr. Tran Dang Nhon, Energy Consultant, ECC HCMC	Hoc Mon District HCMC
17.00	Move to Binh Duong		
23 September, TUESDAY			
8.30 – 10.00	19. Meeting with DoST and Center for Technology Transfer of Binh Duong <i>Issues:</i> <ul style="list-style-type: none"> - Local initiatives and policy on EC&EE - Results of DEMO projects and potential replication projects in Brick making sector 	- Mr. Nguyen Van Rua, Director of DoST, Binh Duong - Mr. Le Tan Cuong, Director of Center for Technology Transfer	DoST Office No. 26 Huynh Van Nghe Thu Dau Mot city Binh Duong Province
10.30 -1 5.00	20. Site visits to three projects in brick making sector <i>Issue: Vertical Shaft Brick Kiln demonstration</i>	- Mr. Le Tan Cuong, Director of Center for Technology Transfer	Binh Duong
19.00	Departure to Hanoi		
24 September, WEDNESDAY			
9.00 – 12.00	Meeting with PMU on preliminary findings of MTE - Draft report	PMU staff	PECSME Office 65B To Hien Thanh Hanoi
14:00 – 17.00	Meet with individual coordinators of PECSME components - Draft report		PECSME Office 65B To Hien Thanh Hanoi
25 September, THURSDAY			
9.00 -11.30	21. Report revision		PECSME Office 65B To Hien Thanh Hanoi

Time	Meeting/Site Visit	Persons Visited	Location
12:00 – 13:00	Lunch break		
15.00	Debrief meeting with UNDP CO/PMU on MTE initial findings	Le Van Hung, NPD and PMU staff	PECSME Office 65B To Hien Thanh Hanoi
26 September, FRIDAY			
	22. Report revision		PECSME Office 65B To Hien Thanh Hanoi
29 September, MONDAY			
	Departure of Mr. Wong from Hanoi		

Appendix C – List of Persons Interviewed and Documents Reviewed

This is a listing of persons contacted in Vietnam (unless otherwise noted) during the Evaluation Period for the MTE only. The Evaluator regrets any omissions to this list.

- 1) Mr. Le Van Hung, Programme Officer, Sustainable Development Cluster, UNDP Vietnam
- 2) Ms. Le Le Lan, Programme Officer for Monitoring and Evaluation, UNDP Vietnam
- 3) Mr. Noel Soriano, Regional Technical Advisor for Climate Change, UNDP-GEF, Bangkok, Thailand
- 4) Mr. Takaaki Miyaguchi, Regional Technical Specialist for Climate Change, UNDP-GEF, Bangkok, Thailand
- 5) Mr. Pham Huu Giuc, National Project Director, PECSME
- 6) Mr. Louis Philippe Lavoie, International Senior Technical Advisor, PMU
- 7) Mr. Nguyen Ba Vinh, Project Manager, PMU
- 8) Dr. Pham Thi Nga, National Senior Technical Advisor, PMU
- 9) Mr. To Dinh Thai, Policy and Institutional Coordinator, PMU
- 10) Mr. Phi Van Lich, Policy Advisor, PMU
- 11) Mr. Mai Van Huyen, Communication and Awareness Advisor, PMU
- 12) Mr. Tran Minh Khoa, Training and Demonstration Coordinator, PMU
- 13) Ms. Pham Thi Hanh Nhan, EESP and Financing Coordinator, PMU
- 14) Mr. Nguyen Dinh Hiep, Deputy General Director, Science and Technology Department, MoIT and Coordinator of the National EE Programme
- 15) Mr. Phuong Hoang Kim, Expert, Energy Sector, MoIT
- 16) Mr. Tran Quoc Binh, Vice Director, SME Banking Dept, VietinBank
- 17) Mr. Nguyen Viet Manh, Deputy General Director, VietinBank
- 18) Mr. Nguyen Viet Thang, SME Banking Department, VietinBank
- 19) Mrs. Tran Thi Nga, Director, Chuong Duong Branch, VietinBank
- 20) Mrs. Vu Thi Lien, Deputy Director, Chuong Duong Branch, VietinBank

- 21) Mrs. Huong, Deputy Head, Enterprise Office, Chuong Duong Branch, VietinBank
- 22) Mr. Ngiuyen Nam Phuong, Deputy Director, VEPP
- 23) Dr. Pham Hoang Luong, Vice-President, Research and Graduate Training, HUT
- 24) Dr. Nguyen Xuan Quang, Lecturer, Institute of Heat Engineering and Refrigeration (IHERE), HUT
- 25) Mr. Bui Thanh Hung, Vice Director, IHERE, HUT
- 26) Mr. Nguyen Duc Quyen, VSBK Training Manager, HUT
- 27) Mr. Ly Dinh Son, Vice President, Vietnam Association of SMEs
- 28) Mr. Huynh Phuoc, Director, DoST, Danang
- 29) Mr. Huynh Anh Hoang, Director, Danang Science Technology Process Application Center, Danang
- 30) Mr. Duong Hoang Van Ban, Head of EC Division, Danang Science Technology Process Application Center, Danang
- 31) Mr. Huynh Kim Tuoc, Director, ECC, DoST, HCMC
- 32) Dr. Le Hoai Quoc, Deputy Director, DoST, HCMC
- 33) Mr. Le Hoang Viet, Director, Enerteam, HCMC
- 34) Mr. Nguyen Van Rua, Director, DoST, Binh Duong
- 35) Mr. Le Tan Cuong, Vice Director, DoST, Binh Duong
- 36) Mr. Tran Van Hop, Director of Center for Technology Transfer
- 37) Mr. Nguyen Van Thu, Director, Thien Tri Paper Co, HCMC

Documents reviewed for this evaluation (all from UNDP unless otherwise noted) includes:

- 1) PECSME Project Documents (2005)
- 2) Loan Guarantee Agreement
- 3) Demonstration Program Evaluation Report (2008)
- 4) Financial Mechanism Evaluation Report (2008)

- 5) Report on the incorporation of EC&EE into the government regulations on the Fund for technology transfer (June 2007)
- 6) Study on incorporating relevant EC&EE technologies into the Lists of technologies to promote energy saving and efficiency (June 2007)
- 7) Possibility of incorporating EC&EE contents into government guidelines for the Law on technology transfer (June 2007)
- 8) Some local initiative and policy on EC&EE issued by local governments
- 9) Project communication strategy (September 2006)
- 10) Report of the survey on awareness of SME on energy efficient use (December 2006)
- 11) Report on assessment of SMEs and public opinion on EC&EE use (April 2007)
- 12) Energy Use Database Report (June 2007)
- 13) Training Need Assessment (local trainers, EESPs, DoSTs and FSPs) (June 2007)
- 14) Training Plan of PECSME Training Program (local trainers, EESPs, DoSTs and FSPs)(July 2007)
- 15) Training Material Assessment (local trainers, EESPs, DoSTs and FSPs) (November 2007)
- 16) Training Material of Module 1 – Energy Audit & EC&EE Technology (July 2007)
- 17) Training Material of Module 3 – Contracting, Monitoring and Verification of Energy Savings (October 2007)
- 18) Training Material of Module 6 – Investment Grade Study (March 2008)
- 19) Training Material of Module 2 – Financial Analysis & Loan Document (August 2007)
- 20) Training Material of Module 4 - Project Implementation Management (April 2008)
- 21) Training material and Training Evaluation Reports of one on job-training on EC&EE in paper sector (January-April 2008)
- 22) Training Material of Module 7 – Introduction to EE Investment Projects for Financial Service Providers (FSPs) (May 2008)
- 23) Design of Loan Guarantee Fund Mechanism (July 2006)
- 24) Guidelines on LGF Operation and VietinBnk Loan Program (Formerly INCOMBANK) (May 2007)
- 25) Documentation of 10 Demo Projects including: Energy audit reports, Feasibility Studies, Implementation Reports and Verification Reports (2006 and 2007)

- 26) Documentation for 5 Replication Projects (out of total 67 projects) including: Energy Walk-through audit reports, Detail Energy audit reports, Feasibility Studies (20 FSs), Implementation Reports. (2007 and 2008)
- 27) Data on Energy Saving and CO₂ Emission Reduction from 132 EC&EE projects implemented
- 28) PECSME' Guideline for Selection and Implementation of EC&EE Projects (May 2007)
- 29) UNDP Project Document including all partner's commitment letters (October 2005)
- 30) Project Inception Report (January 2006)
- 31) APPR & PIR for 2006 and 2007
- 32) AWP & Targets 2006, 2007, 2008
- 33) QPPR and QWP – QI, QII & QIII 2008
- 34) Project Monitoring and Evaluation Plan (May 2008)

Appendix D – Original April 2004 Project Framework Design

Project Strategy	Success Indicators	Means of Gauging Success	Assumptions
A. Project Goal			
1.1. The annual growth rate of GHG emissions from SMEs is reduced through the removal of major barriers to adoption of more energy efficient technologies and energy management practices	Cumulative GHG emission reduction from SME' activities of about 962.0 ktonnes CO ₂ by the end of Year 2009.	<ul style="list-style-type: none"> - Documentation of energy consumption for 5 major SME sub-sectors by PMO. - Inventory conducted by MONRE. 	Energy consumption monitoring activities under the project are fully supported.
B. Project Purpose			
2. Energy utilization efficiency in SME sector is significantly improved	Cumulative energy savings of 136.1 KTOE in the SME sector achieved by end of Year 2009	Documentation of the number of EC&EE investments implemented.	Energy policies encouraging EC&EE are strictly and seriously enforced.
	Average energy cost per unit production in the SME sector is reduced by 10-15% by Year 5.	Project surveys in 5 major SME sub-sectors and evaluation reports.	Reliable data on energy savings are available from SME financial records.
C. Project Outputs			
1. EC&EE Policy and Institutional Support Development Program			
Increased impact of existing policies as well as from the recently enacted EC&EE decree through strengthened capacity of relevant Govt. Ministries, Departments and Agencies in effective policy and institutional design, guidance, implementation and enforcement of energy conservation measures.	Timely development and implementation of necessary regulations, circulars, support and control mechanisms and enforcement giving practical effect to existing policies; and greater use of environmental standards to reduce GHG emissions by Year 3.	<ul style="list-style-type: none"> - EC&EE policy recommendations - Relevant circulars & regulations. - Survey on impact of incentives. - Documentation of EC&EE aspects of national SME development program. - EC&EE Expert Assoc. Reports.. - New environmental standards enforced by NEA. 	<ul style="list-style-type: none"> - Related ministries assist development of relevant circulars and regulations. - Strict enforcement of circulars and regulations on incentives. - MOST and ECCs support capacity building activities. - SMEPC and SMEDD consider EC&EE in SME development.

Project Strategy	Success Indicators	Means of Gauging Success	Assumptions
1.1 Improvement of EC&EE Awareness and Building Capacity on EC&EE Policy Development.	<ul style="list-style-type: none"> - 3 national seminars with total of 400 participants held in the first and second years. - 4 training courses held with 100 central and local government officers trained by Year 2 & 3. - 4 study tours conducted during Years 2 and 5. - At least 2 policy papers prepared and 2 policy recommendations on EC&EE proposed by capable policy makers at central and local levels every year starting Year 2. 	<ul style="list-style-type: none"> - Attendance reports and profiles. - Proceedings of each workshop highlighting recommendations for integration of EC&EE in SME development policies. - Training reports. - EC&EE elements incorporated in SME development policies at national and local levels. - Documented contribution by trainees to subsequent project activities. - Documentation of EC&EE policy recommendations. 	<ul style="list-style-type: none"> - Central and local government will involve key policy makers in formulation of SME EC&EE development policies. - Relevant individuals and institutions are interested in EC&EE and SME development, and share relevant knowledge. - Active participation by relevant ministries and local government. - Relevant individuals and appropriate institutions exist abroad that meet study tour requirements.
1.2 Development of Incentive Policies for Supporting EC&EE Investment in SMEs	<ul style="list-style-type: none"> - Circular on Labeling formulated and approved by MOI by Year 3. - Circular on Tax Incentives & Financial Incentives formulated and submitted to MOF for approval by end-Year 2. - Regulation on SME EC&EE technology transfer formulated and approved by MOST by Year 3. 	Documentation of the relevant circulars and regulations.	<ul style="list-style-type: none"> - Responsible ministries will commit to develop circulars and regulations. - Circulars and regulations on incentives for EC&EE investments in SMEs are strictly enforced.
	<ul style="list-style-type: none"> - Workshops on the introduction and promotion of new circulars completed by Year 3. - At least 500 SMEs utilize incentives during Years 3 to 5. 	<ul style="list-style-type: none"> - Workshop proceedings. - Survey report on impacts of incentive policies. 	<ul style="list-style-type: none"> - Circulars are approved. - SMEs are interested in utilizing available incentives.

Project Strategy	Success Indicators	Means of Gauging Success	Assumptions
	Recommendations on future enhancements of SME EC&EE policies completed by Year 5.	Documentation of policy recommendations.	Impact assessment reports of new policies are made available.
1.3 Provision of Technical Assistance for SMEPC and SMEDD to Incorporate EC&EE Program into the National SME Development Support Program	A suitable EC&EE support program highlighting promotion policies for the practice of EC&EE in SMEs is incorporated into the National SME Dev't Program by Year 4.	Documentation of the national SME development program.	SMEPC and SMEDD consider EC&EE as an essential element in SME development programs.
1.4 Establishment and Operation of EC&EE Coordinating Agencies in the SME Sector and Provincial Technical Support Networks	<ul style="list-style-type: none"> - VECP and ECC capacities and facilities improved by Year 1. - At least 80% of the VECP/ECC trainees substantially contribute to implementation of PECSME activities by Year 2. 	Progress report by PMO, VECP and by ECCs.	MOST and ECCs commit to support the capacity building activities of the PECSME project.
	<ul style="list-style-type: none"> - EC&EE Expert Association established by end-Year 3. - At least 200 EC&EE projects are annually supported by the Expert Association, starting Year 4. 	Documentation of the establishment of the association. Annual Reports of the association.	There are sufficient EC&EE experts interested in forming and sustaining an association.
1.5 Supporting Relevant State Agencies in Developing EC&EE Regulations	<ul style="list-style-type: none"> - Regulations on Energy Efficiency Service Providers' Accreditation drafted and approved by MOI by Year 3. - At least 3EC&EE service providers accredited by DOIs each year starting Year 4. 	Documentation of regulations and accreditation.	MOI and DOI will be interested in receiving this assistance.

Project Strategy	Success Indicators	Means of Gauging Success	Assumptions
	Direction on regular energy consumption reporting by industrial enterprises is drafted and approved by MOI by Year 2.	Documentation of regulations.	MOI will be interested in receiving this assistance.
1.6 Supporting NEA in Studying and Modifying Environment Standards Related to GHG Emissions	<ul style="list-style-type: none"> - Recommendations on modification of environmental standards to incorporate EC&EE concerns are completed by Year 4. - 3 new environmental standards influenced by PECSME enforced by NEA by Year 5. 	<ul style="list-style-type: none"> - Documentation of EC&EE recommendations addressed in environmental standards. - Documentation of new standards recommended by PECSME that are enforced by NEA. 	NEA will be interested in receiving this assistance.
2. EC&EE Communications and Awareness Program			
Enhanced SME and public awareness of EC&EE through increased effectiveness and regular updating of an integrated information collection, dissemination and reporting system.	Establishment and operation of an integrated communications strategy that underpins the development of an information system that gathers information from SMEs, development of information, dissemination of information through appropriate range of channels, and working with and through a range of information providers by end-Year 3.	<ul style="list-style-type: none"> - Completion of Communications Strategy - Progress reports. - Documentation of training materials. - Lists of training participants. - Website hits on EC&EE info. - Evaluation of awareness campaigns. - Report on SME EC&EE projects. - SME energy-use database. - Published leaflets and booklets. - Documentation of info packages. - Assessment of info packages. 	<ul style="list-style-type: none"> - Stakeholders willing to participate in development of, and “buy-into” into final communications strategy. - Participating organizations join & participate in info networks. - SMEs are willing to provide energy use and other relevant information. - Government continues info program after project end. - SMEs participate in courses. - EC&EE Champions, EESPs, and ECCs actively participate.

Project Strategy	Success Indicators	Means of Gauging Success	Assumptions
2.1 Development of Communications Strategy	Strategy developed and agreed to by key stakeholders by end Year 1.	Documentation of completion and operation of strategy.	Capability exists or is contracted in to develop strategy.
2.2 Establishment of Information Dissemination Network and Strengthening the Capacity of Organizations Involved in Information Network	Strategy operation reviewed at end of year 2 and findings incorporated in revised overall communications strategy and its operation. Info. network established and relevant participating organizations identified by end-Year 1.	Findings of communications strategy adopted. Progress reports.	Necessary participating organizations are interested in joining network.
	<ul style="list-style-type: none"> - 4 comprehensive training courses for participating organizations conducted annually in the first two years. - Substantial contribution by at least 80% of the trainees to the PECSME info. dissemination activities by Year 2. 	Documentation of training materials and lists of participants.	Identified information organizations actively participate in the training courses.
	<ul style="list-style-type: none"> - Study tours for key information network participants conducted in the first and second years. - At least 80% of the study tour participants contribute their learning experiences to PECSME info. dissemination activities by Year 2. 	<ul style="list-style-type: none"> - Reports of study tours. - Evaluation of study tour participant contributions to PECSME. 	International organizations are willing to share their experiences.
2.3 Assessment of Awareness of SME and General Public on EC&EE	<ul style="list-style-type: none"> - Initial surveys on knowledge, attitudes and practices regarding utilization of energy among 	<ul style="list-style-type: none"> - Survey results (initial and feedback). - Reports on survey results and recommendations. 	<ul style="list-style-type: none"> - SMEs are willing to provide information needed. - Central and local government agencies of

Project Strategy	Success Indicators	Means of Gauging Success	Assumptions
	<ul style="list-style-type: none"> - SMEs completed in Year 1. - Feedback surveys completed by mid-Year 4. - Recommended sustainable EC&EE information dissemination program incorporating recommendations based on SME feedbacks completed by mid-Year 4. 	<ul style="list-style-type: none"> - Documentation of the recommended sustainable information dissemination program post-PECSME. 	<p>GOV continue to implement recommended sustainable info dissemination program post-PECSME.</p>
2.4 Development of SME Energy-Use Database	<ul style="list-style-type: none"> - SME energy-use database developed by Year 2. - Database is ready and used by SMEs, suppliers and researchers in Year 3. 	<ul style="list-style-type: none"> - Documentation of database. - EC&EE database fully operational and housed in MOI. - Documentation of the number of users of the database. 	<ul style="list-style-type: none"> - The regular reporting of energy consumption by SMEs occurs. - SMEs cooperate in providing information needed. - Information provided is of sufficient quality to be useful.
2.5 Dissemination of EC&EE Information to SMEs through the Network	<p>Information gathered on EC&EE consultancy availability and specialization, available EC&EE technologies, contact points, financial assistance and regulations formatted and circulated to key stakeholders in information network as well as to ECCs in Year 3.</p>	<p>Documentation of information gathered and disseminated.</p>	<ul style="list-style-type: none"> - Necessary information is made available. - Relevant organizations are willing to provide timely and high quality information.
	<ul style="list-style-type: none"> - Internet page on EC&EE information created based on SMEnet (the website of VCCI) and operated by Year 2. - Information posted on the web site regularly updated starting Year 3. 	<p>Record of the number of website visitors searching for EC&EE information.</p>	<p>SMEs and participating organizations are willing to provide timely and high quality information.</p>

Project Strategy	Success Indicators	Means of Gauging Success	Assumptions
	<ul style="list-style-type: none"> - Leaflets and booklets on EC&EE published in Years 1 & 2. - Articles on 3 EC&EE topics published in leading local newspapers and magazines annually. - Information dissemination packages (comprising posters, advertisements, newsletters, small-sized stickers, training books, radio and TV programs) for seven target groups developed and implemented annually from Year 2. 	<ul style="list-style-type: none"> - Published leaflets and booklets. - Documentation of the information packages for the seven target groups. - Report on assessment of information packages. 	Stakeholders are interested and willing in participating in the program.
2.6 EC&EE Advocacy and Awareness Campaigns	Workshops, forums and information exchange meetings conducted by ECCs every 6 months.	<ul style="list-style-type: none"> - Workshop proceedings. - Seminar proceedings. - Info. exchange meeting minutes. - Evaluation reports on effectiveness of EC&EE awareness campaigns. 	EC&EE champions, target groups and ECCs actively participate.
	<ul style="list-style-type: none"> - 2 Exhibitions of energy efficient equipment conducted by MoST within project duration. - Suppliers successfully use PECSME marking materials to sell their EE equipments. 	<ul style="list-style-type: none"> - Documentation of exhibitions held. - Evaluations by exhibition attendees. - Evaluations by exhibitors. - Exhibition sponsorship obtained. 	<ul style="list-style-type: none"> - Energy efficient equipment suppliers will be interested to participate in these exhibitions. - SMEs will be interested to attend these exhibitions.
2.7 SME Registration of Interest in Obtaining Technical Assistance to Carry out EC&EE	<ul style="list-style-type: none"> - SME's registration of implementation of EC&EE projects conducted at ECCs starting Year 2 & 3. - At least 500 SMEs are 	ECC reports on SME registration of implementation of EC&EE projects.	<ul style="list-style-type: none"> - ECCs are capable of and willing to undertake this work. - SMEs are willing to register their interest in, and

Project Strategy	Success Indicators	Means of Gauging Success	Assumptions
	registering to implement EC&EE projects through ECCs during Year 2 & 3.		implementation of, EC&EE projects.
3. EC&EE Technical Capacity Development Program			
Improved skills in EC&EE implementation through enhanced training and evaluation	Establishment and operation of integrated and sustainable SME EC&EE training system for trainers, energy consultants, managers and technicians;	<ul style="list-style-type: none"> - Lists of certified trainers. - Training material documentation. - Training course evaluations. - Surveys of SMEs. - SME energy use reports. - Energy audit reports. 	<ul style="list-style-type: none"> - Trained trainers participate. - SMEs report energy use. - Technical universities and colleges include EC&EE in engineering curricula.
3.1 Provision of Training for Trainers	<ul style="list-style-type: none"> - Training materials completed and approved by end-Year 1. - 45 trainers certified by MOST by mid-Year 2. - About 75% of the trained trainers are providing EC&EE training under the project by mid-Year 2. 	<ul style="list-style-type: none"> - Lists of certified trainers. - Documentation of training materials. 	Trained trainers will participate in the subsequent training activities of the project.
	5 trainers from universities and colleges trained abroad.	Documentation of training certifications.	Capable trainers selected to participate in training courses abroad.
3.2 Conduct of SME Training Courses	500 SME managers from selected provinces trained through 1 day-training seminars on benefits of EC&EE by Year 2	Training course reports.	<ul style="list-style-type: none"> - SMEs are willing to participate in training courses. - Regular energy consumption reporting by

Project Strategy	Success Indicators	Means of Gauging Success	Assumptions
	<ul style="list-style-type: none"> - 500 technicians from 500 SMEs in selected provinces in Northern, Central and Southern areas trained on EC&EE techniques and practices by Year 2 & 3. - 10 training courses on bankable EC&EE project design for SMEs conducted starting from Year 2. - At least 500 SMEs are implementing EC&EE techniques and practices from Years 3 to 5. - At least 500 SMEs that participated in the training courses are either implementing or planning to implement EC&EE projects from Years 3 to 5. 	<ul style="list-style-type: none"> - Training course reports. - Survey of SMEs. - Energy Consumption reports submitted by the SMEs to DOI in selected provinces. 	<p>SMEs is implemented and is of sufficient quality to be useful.</p>
3.3 Development of Sustainable EC&EE Training Programs for Relevant Universities and Colleges	<ul style="list-style-type: none"> - Design of EC&EE training programs completed by Year 4. <p>At least 3 universities and colleges committed to include EC&EE in their engineering curricula by Year 5.</p>	<ul style="list-style-type: none"> - Documentation of training programs for universities and colleges. - Documentation of commitments. 	<ul style="list-style-type: none"> - Technical universities and colleges are interested in including EC&EE in their engineering curricula. - Education authorities approve the inclusion of EC&EE in engineering curricula.
3.4 Monitoring and Evaluation of Training Program	<p>Redesign of the training program incorporating recommendations from evaluation findings completed by mid-Year 5.</p>	<ul style="list-style-type: none"> - Documentation of evaluation reports. - Documentation of the redesigned training program. 	

Project Strategy	Success Indicators	Means of Gauging Success	Assumptions
3.5 Conduct of Energy Audits in Selected SMEs	<ul style="list-style-type: none"> - Evaluation report on SMEs energy utilization performance completed and submitted to MOST by end-Year 2. - 60 energy consultants trained in energy auditing and undertake audits at selected sites by mid-Year 2. - At least 25% of trained consultants carrying out energy audits by Year 3. 	<ul style="list-style-type: none"> - Documentation of energy auditing reports. - Evaluation reports. 	<ul style="list-style-type: none"> - SMEs are aware of EC&EE benefits. - Capable energy consultants are available and are selected to participate in training courses.
4. Energy Efficiency Services Provision Support Program			
Fostering of growing competitive and sustainable energy efficiency services provision industry through enhanced business, engineering and financial skills.	Enhanced commercial energy efficiency service provision (EESP) industry effectively marketing services to SMEs leading to wider use of energy audits; increased uptake of energy audit recommendations, providing specialist services such as enhanced plant design, process integration, energy monitoring and plant commissioning, and establishment and implementation of planned preventive maintenance regimes by Year 3. Improved knowledge of, training in, and R&D support for, local EC&EE equipment supply by Year 3	<ul style="list-style-type: none"> - EESP training evaluation reports. - Establishment of EESP institutional and legal framework. - Establishment of new EESPs. - Documentation of technical assistance provided to EESPs. - Evaluation of EESP contracts and projects. - Evaluation of EESP service delivery. - Local equipment supply capability reports. - Documentation of R&D program. 	<ul style="list-style-type: none"> - Existing EESPs interested in receiving technical assistance. - Energy consultants, financiers, and entrepreneurs interested in forming new EESPs. - EESPs provide reliable and quality energy services. - SMEs become aware of EC&EE benefits of using EESPs. - Local equipment suppliers will be interested in industrial equipment energy performance improvement.

Project Strategy	Success Indicators	Means of Gauging Success	Assumptions
4.1 EESPs Training Program	<ul style="list-style-type: none"> - Managers from 15 selected potential EESPs trained on developing business plans and designing energy efficiency service packages by Year 2. - At least 10 EESPs start preparing business plans following the model presented in the training course by Year 3. 	<ul style="list-style-type: none"> - Training evaluation reports. - Documentation of EESP business plans. 	EESPs are interested in, and will attend the training programs.
	<ul style="list-style-type: none"> - 60 consultants from engineering consulting firms trained on EC&EE engineering and financial arrangements for investment projects by Year 2. - At least 75% of trained EESPs financing and implementing EC&EE projects by Year 3. - At least 3 new EESP businesses are legally established during Years 4 and 5. - At least 3 consulting firms incorporate energy efficiency services provision into their business operations each year starting Year 4. 	<ul style="list-style-type: none"> - Training evaluation reports. - Documentation of EESP projects. - Documentation of establishment of new EESPs. - Company reports. 	EESPs and engineering consultants are interested in, and will attend, the training programs.
4.2 Development of a Suitable Institutional and Legal Framework for EESP Activities	A suitable institutional and legal framework for EESPs prepared by consultants and submitted to MOI by Year 2	Documentation of institutional and legal framework for EESPs.	Energy consultants, entrepreneurs and financiers are interested in energy efficiency service provision businesses.

Project Strategy	Success Indicators	Means of Gauging Success	Assumptions
4.3 Provision of Assistance for EESP Operations	Technical assistance provided to local EESPs in making bankable project proposals, business plans and in securing financing for SME clients by Year 3.	<ul style="list-style-type: none"> - Documentation of technical assistance. - Progress reports by PMO. 	EESPs are willing to receive this technical assistance.
	Development of EESP energy efficiency engineering design tools and model marketing strategies by Year 3.		
4.4 Supporting the Implementation of Standardized Contracts to Deliver EESP Services to SMEs	A total of 50 EESP contracts for providing energy efficiency services marketed and implemented with SMEs during Year 3 and 5.	<ul style="list-style-type: none"> - Documentation of signed contracts. - Evaluation report on service delivery. 	<ul style="list-style-type: none"> - SMEs are aware of EC&EE benefits. - EESPs have capacity to provide reliable quality energy services.
4.5 Assessment of Local Capabilities for Energy Efficient Equipment Provision	<ul style="list-style-type: none"> - Evaluation of capabilities of local EE equipment provision prepared by mid-Year 2. - Recommendation on EE equipment provision development program prepared and submitted to MOST by the end-Year 2. 	<ul style="list-style-type: none"> - Documentation of evaluation reports. - Documentation of recommendations on EE equipment provision development program. 	<ul style="list-style-type: none"> - Local EE equipment providers cooperate and share reliable information on their operations. - Local EE equipment providers are interested in supplying improved EC&EE performance equipment.
4.6 Evaluation of Energy Performance of Industrial Equipment	<ul style="list-style-type: none"> - Evaluation of energy performance of locally produced industrial equipment prepared by end-Year 2. - Identification of energy performance improvement potential for locally produced industrial equipment completed and submitted to MOST by end-Year 2. 	<ul style="list-style-type: none"> - Documentation of evaluation reports. - Documentation of identification of potential improvements. 	Local industrial equipment providers are interested in improving the energy performance of industrial equipment.

Project Strategy	Success Indicators	Means of Gauging Success	Assumptions
4.7 Technical Capacity Building for Local Equipment Manufacturers/Fabricators	<ul style="list-style-type: none"> - Training courses on high efficiency equipment design and production technologies for local manufacturers/fabricators conducted by Year 3. - At least 3 manufacturers are either implementing or planning to invest in production of high-energy efficient equipment. 	<ul style="list-style-type: none"> - Training course reports. - Survey of local equipment manufacturers/fabricators. 	Local equipment manufacturers/fabricators are willing to participate in training courses.
4.8 Design of a Sustainable EC&EE Research and Development Program	An R & D program supported by local equipment manufacturers/fabricators and MoST completed by mid-Year 4.	Documentation of the program.	Local equipment manufacturers/fabricators express their interest and are interested in financial support.
5. EC&EE Financing Support Program			
Increased financial system willingness to lend to SMEs for EC&EE projects through enhanced knowledge of EC&EE and greater skills in preparing and evaluating loan applications	Mobilization of finance for SME EC&EE investments through loan guarantee fund by year 2, and development of a sustainable EC&EE project financing system by year 5.	<ul style="list-style-type: none"> - Seminar materials developed. - Training courses' evaluation. - Information page on VCCI website. - Publication of brochures/guides. - EC&EE SME loans made. 	<ul style="list-style-type: none"> - Financial institutions interested in, send capable staff to training, and extend credit to SME sector. - VCCI supports activities. - Existing environmental funds provide funding for EC&EE.
5.1 Increasing Banking and Finance Sector's Awareness of Benefits of EC&EE Projects	<ul style="list-style-type: none"> - 5 seminars on risks and benefits, and evaluation of, EC&EE projects for banks and financing institutions completed by Year 2. - At least 9 banks/FIs are providing loans for EC&EE projects to SMEs by Year 3. 	<ul style="list-style-type: none"> - Documentation of seminar materials. - Documentation on SME loans made to EC&EE projects. 	Banks/Financial institutions are interested in providing financing for EC&EE projects of SMEs.

Project Strategy	Success Indicators	Means of Gauging Success	Assumptions
	Enhanced skills of trained banking staff of 9 banks/FIs on EC&EE loan appraisals by Year 3.	Documentation of training course materials and training evaluation reports.	Banking institutions send appropriate staff to training courses.
	Technical service network is established by PECSME to help banks and financial institutions evaluate EC&EE projects by mid-Year 2.	<ul style="list-style-type: none"> - Documentation of the establishment of the network. - Progress reports of technical service network's operation. 	Banking/Financial institutions are aware of this service availability.
5.2 Facilitating SMEs to Access Financing for EC&EE Projects	10,000 brochures/guides on sources of financing, loan guarantees, tax policies and bank requirements for EC&EE investments published and circulated to SMEs and each target group by Year 2.	Publication of brochures/guides by the project.	Financial incentives for EC&EE investments of SMEs are enforced.
	<ul style="list-style-type: none"> - 5 annual roundtable discussions between banks and SMEs are conducted from Year 2. - At least 50 loan agreements are discussed in each round table meeting starting Year 2. 	<ul style="list-style-type: none"> - Minutes of round table discussions. - Documentation on SME loans made for EC&EE projects. 	Banks/Financial institutions are willing to extend credit to SME sector EC&EE investment projects.
5.3 Mobilisation of Guarantee Funding Mechanism	The existing guarantee fund in the Bank of Commerce and Industry is expanded and operated to support EC&EE investments by Year 2.	Documentation of the official establishment of the guarantee fund.	Financial institutions are interested in participating in the financing scheme.
	The guarantee operation regulation formulated and approved by Year 2.	Documentation of regulation.	
	Criteria for guarantee fund completed and enforced by Year 2.	Documentation of criteria used in the guarantee fund.	

Project Strategy	Success Indicators	Means of Gauging Success	Assumptions
5.4 Provision of Technical Assistance for Existing Development and Environment Funds to Provide Funding for EC&EE Investments	<ul style="list-style-type: none"> - EC&EE projects are considered as specific priority target group for existing environment funds by Year 3. - At least 20 EC&EE projects funded by these funds annually starting mid-Year 3. 	<ul style="list-style-type: none"> - Annual reports of the environment funds. - Documentation of funding of SME EC&EE projects by the environment funds. 	Managers of existing environmental funds are interested in providing funding for EC&EE activities in SMEs.
5.5 Evaluation of Established Financing Mechanisms	Evaluation of the effectiveness and viability of financing mechanisms completed by mid-Year 5.	Documentation of evaluation report.	Established financing mechanisms participate in evaluation.
	Recommendation on a sustainable financing program is completed by end-Year 5.	Documentation of recommendation on a sustainable financing program.	Established financing mechanisms participate in documentation.
6. EC&EE Demonstration Program			
Increased credibility of EC&EE through successfully implemented and evaluated demonstration projects	Demonstration of EC&EE management, operational and technology improvements in credible, monitored and evaluated projects completed by mid-Year 3, leading to 500 SME EC&EE investment projects presented to banks for loans from mid-Year 3.	<ul style="list-style-type: none"> - Demo project evaluation reports. - Documentation of implemented SME EC&EE projects. - Project progress reports. - Final project report. 	<ul style="list-style-type: none"> - Supportive demonstration sites. - Financial institutions ready to provide EC&EE financing. - 500 replication SMEs commit to implement EC&EE investments.
6.1 Conduct of Comprehensive Techno-Economic Feasibility Analyses of Potential EC&EE Investment Projects	<ul style="list-style-type: none"> - Review of previous feasibility studies, as well as those during the PDF-B exercise) completed by mid-Year 1. - 10 investment projects selected by mid-Year 1. 	<ul style="list-style-type: none"> - Evaluation reports of all projects reviewed. - Review reports for the selected projects. 	SMEs are willing to cooperate in reviewing processes.
6.2 Identification and Evaluation of Demonstration Requirements	Criteria for selection of demonstration projects developed by the end-Year 1.	Documentation of selection criteria.	
6.3 Identification and	Financial assistance for	Documentation of financing	Financial institutions are ready

Project Strategy	Success Indicators	Means of Gauging Success	Assumptions
Implementation of Removal of Demonstration Project Barriers	demonstration investment proposals secured and arranged by mid-Year 2.	arrangements for demonstration projects.	and able to provide financing for demonstration EC&EE investments.
6.4 Establishment of Baseline Data for Demonstration Sites	Baseline data for demonstration sites established by Year 2.	Documentation of baseline data.	Demonstration sites provide energy use and other necessary data.
6.5 Implementation of Demonstration Projects	<ul style="list-style-type: none"> - Design and bidding completed by the end of Year 1. - Equipment procurement and delivery at each site completed well within project time line. - Equipment and support facilities installed and completed within project timeline. - Installation and commissioning of each demonstration project completed well within project time line. - Demonstration site owners are satisfied with the technical assistance provided during facility start-up. 	<ul style="list-style-type: none"> - Progress and evaluation reports. - Documentation of equipment supply proposals, approved bids, procurement, shipment, delivery and acceptance, and physical installation at demonstration sites. - Documentation of equipment design, installations and support facilities. Inspection and reports on completed facilities. Inspection reports, as well as the commissioning reports. - Documentation of technical services provided during facility start-up and initial operations. 	Management of the 10 demonstration sites fully supports (especially financially) the implementation of the demonstration EC&EE projects.
	Training for demonstration project operating personnel completed by mid-Year 2.	Training materials produced.	Workers are capable of learning the necessary new operating skills.

Project Strategy	Success Indicators	Means of Gauging Success	Assumptions
	<ul style="list-style-type: none"> - Evaluation reports for each demonstration project highlighting operating and economic performance completed by Year 3. - Host demo sites report bi-annually the energy and GHG reduction impacts of their respective projects. - Survey of energy savings from demonstration projects conducted annually starting Year 3. 	<ul style="list-style-type: none"> - Documentation of each technical and economic performance evaluation report. - Bi-annual reports submitted by demonstration site owners. - Survey reports including the survey evaluation reports. 	Monitoring activities are fully supported by SME managers.
6.6 Monitoring and Evaluation of Demonstration Projects	<ul style="list-style-type: none"> - 3 national workshops presenting demonstration program results organized at Northern, Central and Southern areas by mid-Year 3 - Documented evaluation of the operation of the demonstration program completed by end of project. 	<ul style="list-style-type: none"> - Proceedings of the workshops highlighting the papers presented, issues discussed, and recommendations made. - Documentation of technical and economic performance evaluation reports. - Documentation of implemented EC&EE projects. 	All managers of demonstration sites commit to share experiences.
6.7 Provision of Technical Assistance for Implementation of 500 EC&EE Investments	<ul style="list-style-type: none"> - Implementation of 500 EC&EE investments through guarantee and energy service delivery mechanism started mid-3rd year. - Increased annual collective energy savings from EC&EE projects of SMEs in the country bringing up the total to 136.1 KTOE by end of project. 	<ul style="list-style-type: none"> - Progress report. - Final project report. 	All relevant SMEs commit to participate in the program

