

**Global Environment Facility
Proposal for PDF Block B Grant**

1. **COUNTRY:** Vietnam
2. **FOCAL AREA:** Climate Change
3. **OPERATIONAL PROGRAMME:** OP-5: Greenhouse Gas (GHG) Emissions Reduction Through the Removal of Barriers to Energy Conservation and Energy Efficiency
4. **PROGRAM TITLE:** Vietnam: Promoting Energy Conservation in Small and Medium scale Enterprises (PECSME)
5. **TOTAL COST:** US\$ 458,250
(indicative: \$10-12 million for the full project, of which \$ 3m from GEF, \$4m from the government, and \$3-5m from donors?)
6. **PDF REQUEST:** US\$ 330,000
(\$3 million for the full project ?)
7. **IN-KIND CONTRIBUTIONS:** US\$ 74,250
8. **CO-FUNDING:** MOSTE: US\$ 4,000
EDP: US\$ 30,000
EU: US\$ 20,000
9. **REQUESTING AGENCY:** United Nations Development Programme
10. **EXECUTING AGENCY:** Ministry of Science, Technology and Environment
- BLOCK:** PDF Block B
11. **DURATION:** 01 January 2002 – 30 June 2003

PROGRAM STRUCTURE

12. PROJECT OBJECTIVE

This project is intended to reduce the greenhouse gas emissions from small- and medium-sized enterprises (SMEs) by removing existing policy, institutional, technical, informational, and financial barriers to adoption of more energy efficient technologies and practices. The energy management schemes that will be developed, promoted, and demonstrated under this project, and later will be replicated after the project are expected

to result in positive impacts to the country's SME sector. This project will cover SMEs of different ownership, e.g., state-owned enterprises (SOEs), private entities, cooperatives and household-based enterprises.

The project is expected to bring about the following outcomes:

- The policy and institutional capacities of the Government of Vietnam (GVN) in facilitating the adoption of energy efficiency (EE) technologies and practices in SMEs are improved.
- "One-stop shops" for serving the Energy Conservation and Energy Efficiency (EC&EE) needs of SMEs are established.
- The operations of ESCOs (Energy Service Companies) are promoted to, and are utilized by, SMEs in their EC&EE activities.
- Public participation in implementing and monitoring EC&EE as well as environmental performance of SMEs is enhanced.
- EC&EE techniques and technologies are demonstrated to, and are adopted by, SMEs in the brick making, ceramic, textile, paper and food processing sectors.
- Small- and micro-credits are made available, affordable and accessible for SMEs for use in their EC&EE activities.

13. GLOBAL SIGNIFICANCE

Apart from the domestic socio-economic benefits that the proposed project is expected to bring about, the reduction in energy consumption resulting from improved EC&EE practices in SMEs will also contribute to the protection of the natural environment. The proposed project is consistent with GEF Operational Program #5, which calls for the reduction of greenhouse gas emissions through the removal of barriers to energy efficiency and energy conservation. The successful implementation of the project is expected to realize significant improvements in the energy utilization efficiency in the SMEs by an average of 20%. This translates to an equivalent reduction of 240 ktons of carbon emissions per year. The success of the project is expected to have significant effects on the future of other EC projects in the country. If the EC&EE schemes/techniques that will be introduced and implemented in the project are adopted and replicated by all SMEs, the potential carbon emissions reduction is 1.5 million tons per year.

14. BACKGROUND

Overall Energy Supply and Pricing Policy

Vietnam has relatively rich coal and oil resources, and is a net exporter of coal and oil but an importer of natural gas. One third of locally mined coal is exported in addition to satisfying the local market. Vietnam also produces crude oil with relatively high quality, which is thus 100% exported to earn foreign currency while domestic demand is met by imported oil with relatively low quality. Gas is also imported, although two onshore gas fields are under reconnaissance.

Along with the unprecedented economic growth, total energy consumption has increased dramatically and doubled over the last six years. This trend is expected to continue, and will soon force the country to lose its energy exporter status.

The market largely determines the current prices of oil and gas. Coal industry is however fully state owned. It is the government goal to liberate coal price in the market, but the time frame is unclear. Electricity price is heavily subsidized. The present average price is about 5.2 US cents/kWh, yet the World Bank (WB) predicts the long-run marginal cost (LRMC) should be 8.2 US cents/kWh. With the help of the WB, the government has set out a plan to increase electricity price step by step towards the LRMC. There is a general consensus that energy price distortion provides a disincentive to energy conservation and increase of energy efficiency among energy users. However, there have been few efforts made to assess the potential impacts.

Development of SMEs Sector

SMEs are defined as business entities with less than 200 permanent employees and/or less than 5 billion VN Dong (US\$ 357,000) registered capital. The SME sector started with the Government of Vietnam (GVN) decision in 1986 to promote the economic development of state-owned, privately owned, cooperatives-owned and household-based enterprises. The ensuing eighth National Congress of Vietnamese Communist Party reaffirmed this decision and highlighted the importance of SMEs by encouraging the development of SMEs in all economic sectors.

After 1986 the GVN promulgated several policies including legislative measures to encourage the diversification of enterprise types and the increase in sizes of enterprises. Legal documents such as Corporate Law, Private Enterprises Law, Domestic Investment Promotion Law, Civil Law, Commercial Law and Enterprise Law have been issued to create a favorable environment for the development of SMEs. In particular, the passage of the Enterprise Law in June 1999 is a milestone in further improving the policy environment for SMEs. It eliminated part of the entry barriers for private enterprises to various sectors, increased access of private enterprises to credit, permitted freely transferable land use right, and improved the possibilities of the private companies to use land as collateral.

SMEs of all types and ownership have significantly contributed to the national economy. As of 1997 SMEs account for 86.2% of all industrial enterprises in terms of number, 17.6% of total industrial revenue and employ 23% of industrial labor (Source: Survey report on industry sector in the year 1998. Statistical Publishing House –1998, Page 358). Their relative proportion is expected to continue to increase, although the increase in officially registered private companies has been slower than expected whereas the number of informal household enterprises has boomed during the period 1997-1999. The new enterprise law facilitated the registration of SME's and resulted in a rapid increase in the number of registered enterprises after the law became effective. While some industrial sub-sectors, requiring intensive capital investment are composed of large state-

owned enterprises only (e.g., cement, steel, fertilizer and sugar), SMEs are present in almost all industrial sub-sectors.

Although the number of SMEs has grown significantly during the 1990s, the SMEs have not been able to grow in size. In 1997, only about 19% of SMEs had 50-200 employees, and 34% had less than 10 employees (Source: GSO Yearbook). The highest growth in the number of SMEs is in the south of the country.

Energy Consumption and Environmental Concerns in SMEs

According to the Energy Conservation and Efficiency Master Plan (ECEMP) of Vietnam, SMEs consumed 1.4 million tons of oil equivalents (toe) of energy in 1998 in the form of coal, oil, gas, electricity, and wood. This figure is projected to increase to 2.9 million toe in 2005, 4.5 million toe in 2010 and 8.6 million toe in 2020.

Most SMEs evolved out of household businesses. Capital investment is also small, and management is far from being good. Moreover, some of these enterprises employ remarkably old and backward technologies. Most of the equipment used is either fabricated/assembled by them, or are the imported second-hand units from SOEs. The second-hand equipment is usually outmoded and their use has inevitably led to high-energy consumption in SMEs.

The SMEs also cause serious environmental concerns, with water pollution being the most serious concern followed by air pollution. However, due to scattered distribution of SMEs and technical constraints, environmental law enforcement has been stalled even though there are relatively comprehensive environmental standards in effect.

The ECEMP identified three levels of opportunities for energy conservation in industries in Vietnam. Short-term improvements, which do not require or require low investment, can generate up to 15% energy savings. Medium-term improvements, which require investment with payback period of within three years, can generate 18-21% energy savings. Long-term improvements, which require investment of more than three years payback period, can generate 30-37% energy savings.

Furthermore, according to a study initiated by the Non-State Economic Development Center (NEDCEN) for the ongoing Vietnam Energy Conservation Program (VECP), SMEs in all industries demonstrate high EC potential as evaluated by the ratio of energy expenditures to total production costs. The identified sectors with the highest EC potential are: 1) brick and tile; 2) ceramics; 3) tea; 4) paper; 5) plastic; and, 6) textile.

Government Initiatives on Energy Conservation

The GVN will continue to attach great importance to the development of SMEs in the course of promotion of economic reforms through a market-oriented economic development strategy. The Government Five Year Plan on Economic Development (2001-2005) states goals to mobilize private and foreign investment, to intensify SOEs

reform through equitization of small and medium SOEs, and to encourage the development of household and farm businesses, cooperatives, private companies and foreign investors.

In May 1999, the Prime Minister (PM) approved the initiative to develop a decree supporting the development of SMEs. The draft of the Decree has been under review by various ministries, and is expected to be approved by the PM by end of 2000. The draft decree includes establishment of a credit guarantee fund for SMEs, which don't have enough assets that can be used as collateral for obtaining needed financial support. Also under the framework of the decree, two new institutions - National SME Promotion Agency and the SME Promotion Council, will be established using UNIDO assistance (see para. 20). This decree will be the first of its kind specifically dedicated to SMEs development in Vietnam.

In addition to the SME-oriented decree, the Ministry of Science, Technology and Environment (MOSTE), in cooperation with the Ministry of Industry (MOI) is formulating a decree on EC and developing a proposal on establishing an inter-ministerial steering committee for executing and monitoring the decree. The decree will specify EC mandates for concerned government agencies, set legal EC requirements for large SOEs and provide voluntary EC guidelines and financial incentives for SMEs. It will also include energy efficiency standards related to buildings, electric appliances and equipment as well as large energy users. The EC Fund to be created under the framework of the upcoming EC Decree will provide further support to the VECP program as well as operations and extension (where necessary) of the existing EC centers.

Growing concerns about the global and local environmental impact of Vietnam's rapidly expanding fossil-fuel based energy consumption, provided a strong push to the development of a comprehensive program on EC&EE under MOSTE. The program was implemented between 1997-1998 and it evolved into the ongoing VECP, which targets all the EC activities in the various kinds of enterprises in all sectors. The Netherlands government initially sponsored the program.

The initial focus of the EC&EE program was on the development of a policy environment and structure for program implementation. The VECP has started to cooperate with other organizations to: (a) assess legal, institutional and financial situations for EC activities in Vietnam; (b) cooperate with universities to implement the first energy audit training for trainers for industries with European Union co-funding; (c) support provincial departments of science, technology and environment (DOSTEs) and provincial departments of industry (DOIs) in establishing EC centers in large cities; and, (d) cooperate with Vietnam Central Council for Cooperative Unions and Small & Medium Enterprises (VICOOPSME) and the Vietnam Chamber of Commerce and Industry (VCCI) to evaluate the barriers to the implementation of EC activities in SMEs. MOSTE has been designated to lead the implementation of industrial EC projects.

Some other preliminary studies related to EC issues in SMEs have been carried out by NEDCEN. They include: (a) identification of sectors with high EC potential and evaluation of demand of SMEs for EC service; (b) review of policy, institutional and

financial mechanism for EC program for SMEs; and, (c) proposal on the establishment of ESCOs.

Past, Ongoing and Planned Foreign Assistance

Foreign assisted projects on energy efficiency development specific to SMEs in the country are limited. One of these is the MOSTE-GTZ Energy Conservation and Efficiency Demonstration Project on ceramic kilns. This was implemented in 1998-1999. By August 1999, the first two fiber-lined kilns with the respective capacities 5.5 m³ and 8.5 m³ were designed and constructed using German technology. This project focused on technology transfer only, and did not address other barriers hindering the dissemination of the technology, let alone the pervasive barriers to undertaking EC activities in SMEs. The extension of this project is under consideration.

In addition, UNIDO is executing a project "Support to Private Sector Development: - Modeling the National SME Promotion Agency and the Private Sector Promotion Council" with \$173,000 funding from UNDP and the German government. This project will model two new institutions, i.e., the National SME Promotion Agency, and the Private Sector Promotion Council. It will make recommendations on the mandates, objectives, functions and tasks of these new agencies. Establishing the two institutions, specifically serving for SMEs, is part of the government's effort to improve institutional framework for private sector promotion, as declared in Action Plan for Private Sector Promotion. This project is expected for completion in June 2001. The project outcome will be incorporated into the GEF full project development.

A WB /SIDA project has been under implementation for several years in Vietnam addressing some aspects of DSM in the load management and other related sectors. The second phase of this project is being planned through the GEF funding window. Following consultations between UNDP and the WB/ GEF units, the roles of the two agencies in the fields of Energy Efficiency and Conservation have been noted to be fully complementary. There is clear synergy between the two approaches. The WB /GEF concept will be market based where as the UNDP initiative will be more public policy based. Further the target markets to be addressed are different but complementary, and so are the delivery mechanisms. The two project activities will be fully coordinated in the preparation of the final PDF B output.

Existing Barriers

Policy Barriers

SMEs are historically not part of the formal national industrial economy. They are loosely regulated and operated at the margin of the existing industrial regulatory system, making the limited EC initiatives and incentives even less accessible to them. Still today the EC-related policy and regulations are fragmented and dispersed, making them difficult to apply, especially for SMEs. The current policies address better the problems of large SOEs. For example, the government three-tier structure for electricity pricing

encourages electricity savings in all kind of companies. However, only the large SOEs are able to benefit from the pricing policy due to their more formal position in the economy.

DOSTEs are in charge of environmental law enforcement. With their local counterparts (e.g., universities), these are responsible for providing information and promoting EC activities at the provincial level. The pollution fees imposed on polluting SMEs by DOSTEs do little to promote changed behavior of polluters. Their efforts are not significant enough to encourage cleaner production and to promote technological innovation.

SMEs provide job opportunities and economic benefits for the local governments. These benefits outweigh those perceived by the local governments from enforcing environmental regulations. The GVN recognizes these constraints to local regulatory enforcement as well as its responsibilities to enforce existing legislation designed to protect the environment and, also, to provide incentives for efficient energy utilization.

Technological Barriers

Almost all SMEs rely on low-grade, non-standardized technologies and equipment. They either copy technical designs from others, or purchase second-hand equipment from SOEs. Sometimes they take components and spare parts from different places, and assemble them together by themselves. Equipment quality is by no means guaranteed. As a result they produce low-quality products that in turn affect their competitiveness in the market.

The management skills of the owners and managers of SMEs are inadequate. The Vietnam Chamber of Commerce and Industry (VCCI) regard this situation as the “second” largest barrier to the development of SMEs. The SMEs lack long-term development vision, and are more concerned about short-term production profits. They don’t pay attention to potential EC activities often associated with technology advancement with long payback periods. Even though some of them are aware of such opportunities, they lack the technical capacity to carry out EC activities.

Moreover, SMEs are often operated and maintained manually by low-skilled workers. Most household-based SMEs only employ family members or workers who have no or little technical training.

Information Barriers

There is limited accessible information available to SMEs regarding EC policy incentives, technologies, energy conservation potential, opportunities and associated costs/benefits. The available information can only be obtained from a handful of institutions, including VCCI, VICOOPSME, and DOSTEs at the provincial level. Also, there is a need to develop these organizations in the skills to provide EC information.

The public's level of awareness and that of the SMEs about EC opportunities is low. SMEs mainly look for short-term profits through sales, but not the benefits that can be derived from EC&EE. This is largely due to the distorted energy pricing and the low fuel price. SMEs don't know where to find EC-related information and technical support, and they are not aware of the financial benefits of EC activities. The knowledge of the latter would probably be the strongest incentive for them to undertake EC activities. Policy-makers in the government and in the SMEs don't fully recognize the importance of EC activities either. For example, the provincial level import tariff for CFLs (compact fluorescent lamps) in Hanoi is zero because they are regarded as high and energy-efficient technology, but in HCMC their import tariff is as high as 40%.

Financial Barriers

The banking sector in Vietnam is under-developed. There are 5 state-owned commercial, 50 joint stock and 4 foreign joint venture banks, 21 foreign bank branches, 62 foreign bank representatives, and around 1000 credit agencies. State-owned commercial banks are expected to follow banking business practice, but at the same time are required to give priority to government-designated project activities often involving SOEs. The private banking system, established in 1991, consists of joint-stock banks and credit agencies. Due to close relations between SOEs and commercial banks, the private business is served mainly by the private banking sector. The private banking sector is still inexperienced and has limited skills to provide financial services for private business.

There are a number of reasons why SMEs lack access to financing for their EC projects. First, banks/financial organizations lack the necessary capacity to evaluate EC&EE projects. They have to bear the risk of SME project failure and the subsequent loss while loss resulting from failure of SOEs would be borne by the government. Banks also face high transaction costs due to the smallness of potential SMEs projects. The former ceiling interest rate system that prevented banks from requiring higher interest rates for higher risk loans was abolished in August 2000. At present, the lending interest rate is allowed to fluctuate within a determined band around the prime interest rate, which is normally formed in the inter-bank market. This policy should encourage all the banks to give loans, also for SMEs. Moreover, commercial banks apply uniform banking policy for small, medium-size and large industrial clients issued by the governor of the Vietnam State Bank. But in practice, commercial banks still put their emphasis on lending to large enterprises (corporations) and their subsidiaries by lowering the interest rate, promoting marketing to attract and seek customers.

SMEs have low credit reputation with banks. There is shortage of good, bankable project proposals, mainly because of the reasons mentioned previously, and lack of technical support. SME-related financial policy is constantly changing and SME managers are barely able to catch up with or adapt to the change. Also, SMEs' assets are limited and they do not have enough collateral in order to get loans.

The experience in SME development funds is limited in Vietnam. The Small and Medium Enterprise Development Fund (SMEDF) established in 1996 with support from

EU provides loans for all kind of SMEs nationwide and it has been the first SME-specialized financial scheme in Vietnam. SMEDF was executed by MOLISA (Ministry of Labor, Invalids, and Social Affairs) in partnership with Vietnamese state-owned commercial banks. The principal input for SMEDF was USD 25 million. The fund started operation in March 1998. SMEDF accumulated disbursement status through commercial banks, as of 11 May 1999 was USD 10 million, the total number of the projects being 142. This certainly can't meet SMEs' capital demand. SMEDF operates through the commercial banks applying Vietnamese banking rules and it has faced the problems of poor project packaging and lack of collateral. These problems were not addressed by the SMEDF, which at the moment is not operating but it will possibly be extended for a three-year-period starting late 2000 and it would be executed by MOF.

At present, there are two pilot SME credit guarantee funds operating in Vietnam. Germany supports both. Firstly, there is the Credit Guarantee Fund (CGF), which is part of the Vietnam-Germany credit programs, and developed by the Bank for Industry and Commerce (ICB). Total capital of the fund is DM 1.25 million to guarantee borrowers who are short of collateral to get bank credit. Borrowers must possess capital worth 20% of the total amount of the project and the maximum guarantee rate is 80% of approved lending amount. For 6 years of implementation, ICB has issued guarantees to 549 projects with total value of VND 31.7 billion and only 4 of these projects failed to reimburse the loans and used VND 80 million from the fund for compensation. A second credit guarantee fund amounting to USD 100,000 was sponsored via the joint operation of FES (Friedrich Eberc Foundation-Germany) and Habac Consultant Centre together with Habac Agricultural Bank (Habac is a province in the north of Vietnam). This fund awards guarantees to customers who already have credit relations with Habac agriculture bank and want to improve or expand their production capacity but do not have assets available for collateral. Both funds have been prototypes and are relatively small in size but they both have gained remarkable success in promoting the development of SMEs and can be good examples to follow.

GVN has recognized the problem regarding the financing of the development of SMEs. The Government Resolution No.11, approved by the Cabinet in July 2000, designated the Ministry of Finance and other relevant bodies to develop regulations on the organization and operation of credit guarantee funds for SMEs. In general, the establishment of the funds aims to help SMEs and farming households that have demands for capital borrowing but do not have mortgages equal to loans they want. The credit guarantee funds will be set up in several provinces and local governments will directly manage them. At the moment GVN has ordered the MOF to carry out some test cases in provinces where a big number of SMEs exist. To be eligible for the guarantees of the fund, the borrower needs to have assets equal to 30% of the project value to serve as collateral. The bank will meet the remaining 70%, and 80% of this money will be guaranteed by the fund. It is expected that the funds in some big cities will enter into operation year 2001. German funded prototype funds served as examples in this process.

Based on the signed loan agreement between Vietnamese and Japanese Governments under the Miyazawa Initiative, the two-step loans fund for SMEs is going to be

established. The preparations for the establishment of the fund are at the final stages. The operation and management of the fund will be the responsibility of the State Bank of Vietnam. The participating financial institutions will be state-owned commercial banks (Industrial and Commercial Bank of Vietnam and Investment Development Bank). According to the Resolution on standards for the re-financing of funds received by government from overseas sources, the companies which can receive re-finance are, naturally those which are: (1) in good financial position; (2) permitted by the government to receive finance from overseas sources; (3) financially able to repay the loan; (4) capable to satisfy conditions set by government; and, (5) having prepared project feasibility study and have the capital to carry it out.

Under the framework of VECP, the proposal on operation regulations of provincial energy funds (PEF) lending using the rotating fund mechanism has been developed by MOF. The proposal is currently under review by relevant ministries and People's Committees in 5 provinces. The objective of the funds is to promote efficient use of energy, energy conservation, and creating a better environment for the future. The principal input for PEF should be above 10 billions VND, of which about 50% coming from the local budget. Decentralizing the government-funding source is in line with the government policy. Easy access to funding enhances the implementation of EC activities in SMEs and small EC investments in large industries. The fund assists EC promotion in three ways: (1) provide grants to government organizations and NGOs to do EC and promotion activities; (2) provide loans for private and public sector organizations and enterprises investing in EC projects; and, (3) give credit guarantees for organizations and enterprises investing in EC projects. The lending operation will be handled through commercial banks.

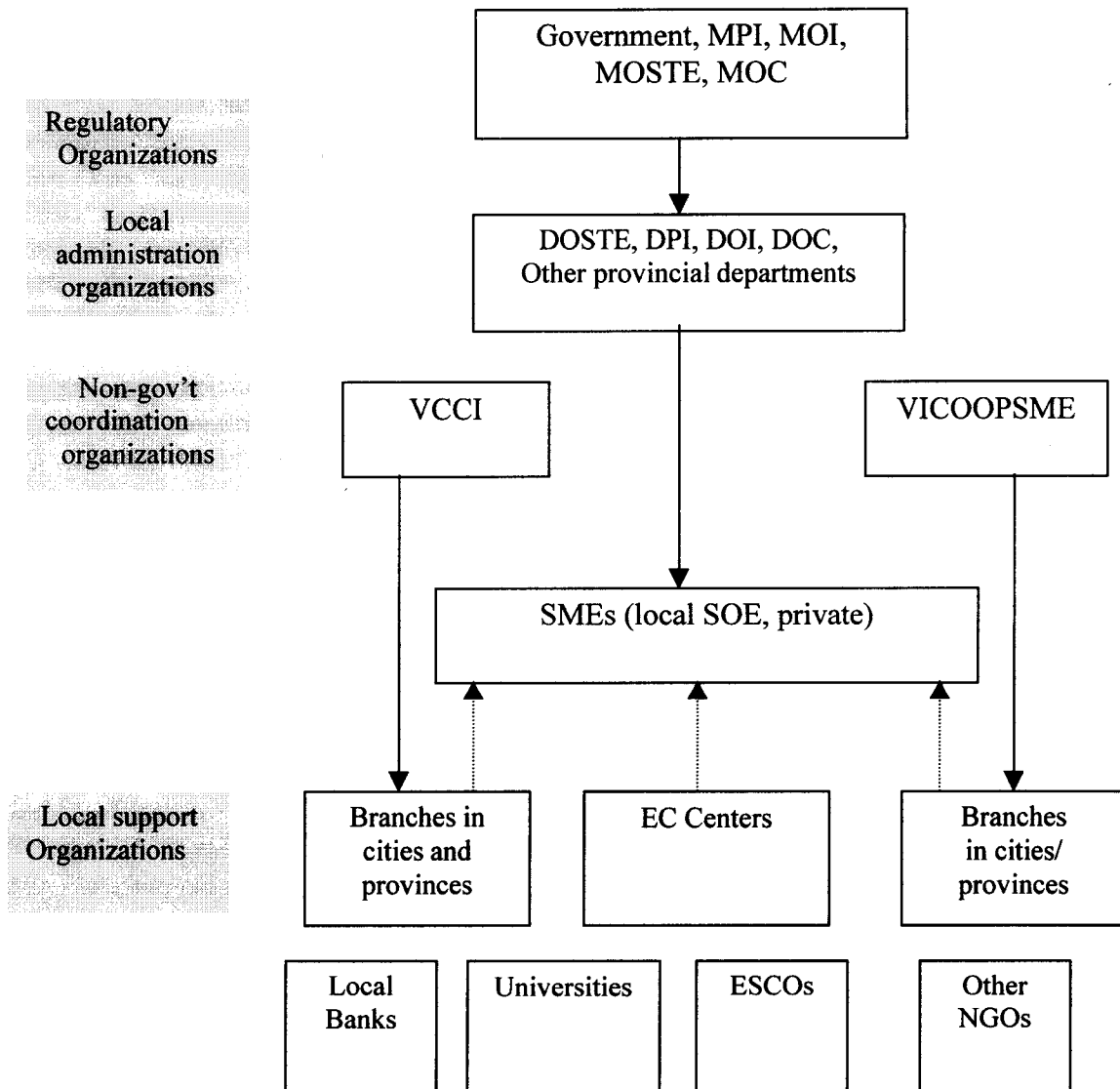
Institutional Barriers

There is not yet a single, leading government agency responsible for SMEs development. In general MPI, MOF and MOSTE coordinate SME related policies such as general support, financing, environment and technology transfer policies. Line ministries, MOI, MOC, MARD and MOT, in addition to some state owned SMEs; determine the policies under their specialty areas. Provincial departments (DPI, DOF, DOSTE, DOI, DOC, DARD and DOT), which are administratively under People's Committees but associated with related ministries, directly manage local state-owned industry and enforce the legislation locally for all SMEs. VICOOPSME and VCCI are SME service network organizations.

MOI or its provincial departments supervise most of the small and medium industrial SOEs. Building materials production (not including production of manufacturing equipment for building materials sector) is under supervision of the MOC or DOC and food processing industries under MARD or DARD. SMEs have limited contacts with ministries. At the provincial level, SMEs are mainly in contact with DOSTEs and other provincial departments such as registration and taxation departments. EC centers, ESCOs and local NGOs (such as local branches of VCCI and VICOOPSME) play important roles in the promotion of SME development.

The scattered management of different aspects of SME development has resulted difficulties in coordination. The GVN expects to establish a National SME Promotion Agency under one ministry (possibly MPI) and an SME Promotion Council to develop SME development policies (according to the SME decree draft dated May 2000). The planned agency will function as a coordinating organization that coordinates all programs, activities in promoting the development of SMEs and works with the council in identifying, formulating and facilitating the implementation of SME promotion policies. The council will function as an advisory body for SME agency.

Figure 1: Institutional Framework for SMEs



15. PROJECT DESCRIPTION

The proposed PDF-B exercise is primarily aimed at coming up with the necessary background information/data and analysis of the identified barriers to the promotion and implementation of EC&EE activities in SMEs. In contrast to the traditional high-government-control-featured management practice for SOEs in Vietnam, this project will adopt an incentive and public intervention combined approach to deal with SMEs. The logic is that SMEs are very dynamic by nature and can adjust their business and operational strategy quickly towards the beneficial direction. However, they need policy trigger, improved access to technical and information exposure, and more importantly, wide and easy access to external technical (e.g. ESCOs) and financial service because of their smallness and diversity, and thus lack of scale of economy. Also, raising the awareness of SMEs about the possibilities of EC activities will play a crucial role in the success of the project.

The EC&EE interventions that will be incorporated in the PECSME project will focus on the current forms of energy being used by SMEs (e.g., coal briquettes, wood and other biomass aside from electricity and petroleum). These will apply to the processes and energy systems that are presently used in their operations. Based on previous studies and projects related to SME development in Vietnam, among the issues that bring about poor energy utilization efficiency in the SMEs are energy pricing, energy availability and energy policy development. The proposed PDF-B exercise will assess and validate the impacts of these issues on the level of energy utilization efficiency and overall productivity of the SMEs. The assessment will gauge the levels of capacity (financial, technical and human), interest and willingness of the SMEs in improving their energy utilization efficiency and overall productivity, and the immediate and future needs to achieve such improvements. A favorable enabling environment in terms of, among others, availability and affordability of efficient forms of energy and energy systems would encourage and assist them in realizing such improvements.

Based on the results of relevant studies in the country and similar projects that have been implemented in Southeast Asia, the following are the possible components of the envisioned barrier removal project in Vietnam's SME sector:

- EC&EE Policy and Regulatory Measures for SMEs - Instituting an integrated policy and legal framework for promotion of industrial energy efficiency, learning from international experience. Includes capacity development for policy makers at the central and provincial levels in the area of energy policy covering also the need to enhance EC&EE efforts in the SME sector.
- EC&EE Institutional Strengthening – Defining the institutional framework and necessary capacity building on SME management on EC&EE, strengthening government decision-making capability regarding EC&EE, and improving inter-agency coordination.

- EC&EE Advocacy and Awareness - Establishing a satellite network of one-stop information shops on EC, and making information service readily accessible through several channels.
- EC&EE Financing Mechanisms – Design and establishment of an affordable, sustainable and financial mechanism to assist SMEs in raising capital for their EC&EE activities. Includes capacity development for banking/financing institutions in the evaluation and financing of EC&EE projects in the SME sector.
- Energy Service Industry Promotion – Promotion of ESCO services to SMEs.
- EC&EE Technical Capacity Development – Provision of adequate technical know-how and skills on energy auditing, energy management, energy business, as well technology transfer to energy consultants, technical institutes and universities, ESCOs and technology developers/suppliers.
- Demonstration Schemes for EE Financing and Market Delivery Mechanisms: Conduct of pilot projects to demonstrate the process by which EE technology applications are designed, developed, financed, implemented, monitored and evaluated. Results of the demonstration schemes will be documented and disseminated among SMEs.

The extent of the current problems of lack of access to clean and efficient fuels by SMEs in rural areas; the widespread inefficient use of cheap and poorly manufactured coal briquettes; and the inefficient use of energy forms such as electricity (which is subsidized for a large number of household SMEs) will influence the type and number of interventions/activities that will be proposed for the PECSME. For example, considering that biomass energy is widely used in SMEs, activities that will address the improper and wasteful uses of such forms of energy will have to be included. Since the subsidized price of electricity does not encourage a large number of household SMEs to use electricity efficiently, the PECSME activities would include interventions that will deal with the issue accordingly to improve the SMEs attitude towards EC&EE.

Considering the above, the sort of activities that could be considered in the PECSME are those that will:

- Bring about changes in the energy supply/distribution policy of the government to enable SMEs easy access to the use of cleaner and more efficient fuels.
- Influence the establishment of infrastructures, by the government and the private sector, that will support the utilization of cleaner and more efficient fuels and/or the conversion/processing of coal and biomass to such environment-friendly types of fuels.
- Lead to substantial changes in the energy pricing policy of the government that will not only be supportive of the socio-economic well being of the citizenry but also the widespread practice of EC&EE.
- Result in the provision of fiscal incentives to SMEs to motivate them to changeover to energy efficient production processes and invest in EC&EE.

Influence the growth of the energy service industry (i.e., ESCOs) in the country that will cater to both SMEs and large industries.

16. DESCRIPTION OF PDF ACTIVITIES

The PDF-B exercise will involve, among others, an evaluation of the existing non-SME friendly policies on the pricing and domestic supply/distribution of energy carriers, as to their contribution to the present level of energy utilization efficiency in, and the attitude towards energy conservation among, the SMEs. Basically, the PDF-B exercise will identify appropriate measures and interventions that will eliminate the negative impacts of the existing barriers on the widespread and continuous practice of EC&EE in SMEs. The following are the major activities that will be carried out under the PDF-B exercise:

(a) Policy Development

A discussion among the concerned agencies about SME-related EC&EE policy will be carried out with the aim of cooperating in the development of SME-friendly EC&EE policies. The activities that are related to the development of policies regarding EC&EE in the country's SME sector includes:

- Review of all the existing and planned policies, government initiatives, programs regarding industrial energy efficiency and SMEs, identification of barriers and gaps.
- Review existing experience and lessons learnt from supporting SMEs from both GEF and non-GEF projects in other countries, including the IFC/GEF SME program.
- Identification of all the organizations involved in SMEs management, and evaluation of the needs of inter-agency coordination regarding SMEs-related industrial, financial, economic, and environmental policy.
- Design of an EC&EE policy development program, including establishment of appropriate policy framework for SME development, and capacity building for the relevant government agencies in policy formulation, coordination and implementation.
- Assessment of potential impact of ongoing energy pricing reform on EC &EE potentials in SME sector.

(b) Institutional Strengthening -- As part of the project development, several activities that are aimed at strengthening capacity of institutions involved in SME development will be carried out.

- Review of EC mandates of major ministries -- While the upcoming EC decree is expected to clarify the roles of concerned ministries with respect to energy efficiency, both UNDP and the WB raised concerns over the lack of clarity on Vietnamese ministerial roles and responsibilities with respect to energy efficiency programs in developing their specific energy efficiency projects. It is proposed that both EC-related PDF B proposals by the UNDP and WB now under consideration include a specific task to review the institutional experiences and capabilities of MOI and MOSTE and, to the extent possible, propose institutional arrangements in each project that would allow participation by both agencies based on their respective strengths.
- Promotion of high-level coordination – This will involve getting the support of key central level ministries such as MOF, MPI, MOI, MOSTE, MOC, MARD, the Government Office and VICOOPSME in the promotion and development of EC&EE activities of SMEs. A draft decree by MPI has already proposed to set up an above-ministry-level SME promotion council for SME development. The intended project could help the operationalization of such council related to EC activities, including development of the operational strategy, working routines, and capacity building for policy-makers.
- Improvement of information service by strengthening capacity of EC centers– This will build upon the existing five EC centers located in DOSTEs of HCMC, Hanoi, Hai Phong, Da Nang, and Can Tho respectively. The EC center in HCMC is also called Cleaner Production Center, and was established earlier than the Vietnam Cleaner Production Center. In addition the VECP plans to establish in the future four new EC centers under DOSTEs. These centers are established as government subsidiaries and receive continuous support from the government. With GEF assistance, these centers are expected to evolve from a government subsidiary to a service-oriented organization. Specifically, these centers would serve as networked providers for EE information, consulting and project bundling services and in-house training for SMEs. The newly imposed business focus on SMEs is deemed not attractive to the private sector (such as those to be developed under the proposed WB EC project), not to mention that these centers would compete with private sector. Therefore, the existing government support is expected to continue and is crucial to its near-term viability, but should eventually be phased out. During the PDF B phase, the specific number and location of, and services to be provided by the ECs will be studied taking into account actual needs, government policy orientation and potential donors' interest. Based on the PDF B output, the full project could support development of business plan and capacity building for the existing and planned (if applicable) centers.
- Strengthening of financial institutions/facilities – A review the existing financial resources in Vietnam that provide assistance to SMEs will be conducted, evaluating their services to SMEs. The review will also cover foreign experience in establishing and operating SME development funds. It will identify the opportunities for GEF involvement in improving existing or on-the-plan financial

mechanisms or in establishing new, more appropriate financing schemes. This activity will also evaluate possible capacity building activities by which GEF can assist in the financing of the EC&EE activities of the SMEs.

- Promotion of ESCOs for providing EC&EE services to SMEs –A program aimed at strengthening existing ESCOs in the country will be designed, which will include activities that will bring about enabling environment for ESCOs to extend their services to SMEs. The PDF-B work will include a review the ESCOs experience in Vietnam and other countries, particularly for SMEs, and marketing the ESCO. An assessment and demonstration of the market potential for ESCO services will also be carried out. The ESCO to be promoted under this activity would focus on three types of niche markets—bundled SME projects that are not attractive to private sector, unbundled SME projects and SME-specific technologies (such as brick-making, ceramic, textile, paper and food processing sectors which are common among SMEs, but not elsewhere), and is therefore complementary with the WB initiatives.

(c) Information dissemination and public awareness campaign – A program for collecting and disseminating information targeting SMES in industries, policy makers, research institutes, and service organizations will be designed. The collected information will be incorporated into the EC centers to be established under Institutional Strengthening activities of the PDF-B work. Some of the information that will be gathered and disseminated to SMEs include:

- Assessment of existing information providers;
- Energy-saving potential of various EC&EE technologies;
- Financial resources and services for EC&EE activities;
- Institutional structure for SME management;
- Providers of EC&EE consulting service, including ESCOs;
- EC&EE technology applications; and,
- EE policy, regulations, guidelines, standards and incentives.

Part of this PDF-B activity is the design of a public awareness campaign program that will educate the public on availability of SME-produced EE products and their energy-saving potential, EE service providers where appropriate, technical service, environmental, EE performance of local SMEs and the results of the envisioned GEF-supported full project.

(d) Training – The PDF-B work will identify all training needs for SMEs in the area of EC&EE. Based on experience in similar EC&EE training programs in other countries in Southeast Asia, the training program that will be designed for the implementation of the intended full project could include the following:

- Energy management, auditing, monitoring and evaluation for SMEs
- Bankable EC&EE project development, energy efficient operations for industrial SMEs.

- Business plan development, marketing, and EE project development, training for trainers and public education for EC Center staffs.
- Development of school curricula on EC&EE, focusing on integrated technical, economic and financial analysis, and energy auditing for EC Centers in universities.
- Development and formulation of EC&EE policies and regulations for policy makers.
- Effective enforcement of environmental and EC standards and related regulations for government officials.
- Evaluation of EC&EE project financial viability, minimization of transaction costs and risks for financial institutions.
- EC&EE business development, marketing, and technical trouble-shooting for ESCOs.

(e) Demonstration Schemes Demonstration Schemes for EE Financing and Market Delivery Mechanism - Based on past studies and available survey information, the PDF-B exercise will identify potential sites for EC&EE financing and energy service delivery mechanism. Pre-feasibility and feasibility studies, if non-existent, will be conducted for selected sites to establish baseline data, and define delivery mechanisms including monitoring and evaluation activities. Activities to help mobilize the needed investment for the demonstration schemes will be conducted.

(f) Development of a full project brief and document - This activity will include estimation of baseline and incremental costs in line with the guidelines of GEF. A full project brief will be prepared. Upon approval of by the GEFSEC of the full project brief, a full project document based on the UNDP format will be prepared.

17. PDF BLOCK B OUTPUTS

The main output of the PDF-B work is Full Project Brief, which discusses all the barriers to the widespread adoption of EC&EE technologies in SMEs and articulates the activities necessary to remove such barriers.

Throughout the PDF-B process, the following outputs will also be achieved:

- A report on review of existing SMEs-related policies and recommendations on the establishment of a SME-focused policy and legal framework.
- Key policy stakeholders are identified, and coordination mechanism recommended.
- The structure and formation of provincial EC center network identified.
- Existing and potential SME-related financing resources/institutions identified, and gaps between the actual availability and demand are also identified.
- Strategy of ESCOs development is formulated, and approaches to strengthening existing ESCOS and developing new ones are identified.
- Information dissemination and public awareness package designed.
- A list of all training needs produced, and means to conduct training are identified.
- Selected sites for the demonstration schemes.

The Full Project Document is the final output of the PDF-B work.

18. IMPLEMENTATION ARRANGEMENT

The PDF-B work will be executed by MOSTE and it has to ensure the delivery of the project outputs and the judicious use of the project resources. It will provide the mechanism and technical inputs necessary to integrate the results of the various activities and to prepare the project brief and project document. The VECP, which is under MOSTE's Department for Science and Technology Management in Industry, will be the agency responsible for the implementation of the PDF-B work.

A Policy Advisory Group (PAG) will be created to provide policy and technical advice. The PAG will be composed of members from the SME Council, the Ministry of Industry, MOSTE, MOF, MPI (SME agency), MOC, local governments and UNDP. The PAG will meet at least three times during the PDF-B work. The Project Management Office (PMO) will be based at the VECP. A technical specialist and a secretary/bookkeeper will be hired as PMO staff. The PMO is also responsible for overall financial management of the PDF-B funds. MOSTE will designate a Project Director who will be in charge of overall project coordination and will manage the PMO operations.

19. ELIGIBILITY

Vietnam ratified the UN Framework Convention for Climate Change in 1994. In line with the reporting requirements of the Convention, Vietnam is now undertaking a comprehensive inventory of greenhouse gas (GHG) emission sources and sinks and preparing prioritized mitigation options and project portfolios under a GEF-funded climate change enabling project.

In accordance with the GEF Operational Strategy on Climate Change, this project brief is designed under Operational Programme #5, which is on the removal of barriers to energy efficiency and energy conservation. It is also fully in line with the national priorities and policies as explained earlier.

20. NATIONAL LEVEL SUPPORT

The proposed project is fully in line with the energy-related objectives of the national EC&E Master Plan and the next Vietnam Five-Year Economic Development Plan (2001-2005), which aim to promote energy savings and technology upgrading in SMEs. It also builds on the findings of MOSTE's Energy Conservation and Efficiency Program and the NEDCEN's EC Supporting Program for SMEs and Business Households, in particular on the evaluation of the SMEs' EC&EE potentials and supporting policy, institutional and financial mechanisms necessary to realize such potentials.

In addition to availing of all existing work and up to US\$ 74,250 in-kind input, MOSTE will provide \$4,000 cash contribution to the PDF Block B activities. EDP of the

Netherlands and the EU will also provide additional US\$ 30,000 and US\$ 20,000 to the PDF-B work. Initial consultations with the local governments and individual SMEs taking part in the demonstration scheme component have indicated that additional” non-GEF funding will become available for the full project following completion of PDF Block B activities.

21. JUSTIFICATION

The proposed PDF B activities are targeted for a fully consultative and participatory approach. The intended full project, the design and development of which will be funded by the requested PDF-B grant, would directly contribute to EC&EE in the SMEs. It will also pave the way for future, larger scale EC&EE technology replications resulting in even greater energy conservation and consequently lesser GHG emissions.

PDF support is required to identify and define the scope of activities and the steps to be undertaken to ensure effective implementation of the envisioned GEF-supported project. The preparatory activities would set in place a full package of activities/interventions that will address the prevailing barriers to the implementation of EC&EE in the SME sector. In order to design a useful and realistic project, as well as design an effective scheme for its implementation, the preparatory activities will have to be carried out to address the institutional and technical problems that have prevented the effective implementation of EC&EE efforts in the past. Considering the number and magnitude of barriers to the design and implementation of EC&EE projects, several pre-project activities involving various key players and stakeholders are necessary. The cash involved in carrying out these activities would require more than that provided in PDF-A grants (US\$ 25,000 maximum). With the number and scope of project development activities that will have to be undertaken to be able to come up with the Project Brief and Project Document of the proposed PECSME project, GEF funding through a PDF-B grant is considered reasonable.

22. TIMETABLE AND BUDGET

The PDF-B Proposal Brief would be submitted to GEF as a project concept by July 2001. The PDF-B activities would start in January 2002, and would be completed by the end of June 2003.

Implementation of the PDF-B activities, as proposed above, would cost a total of US\$ 458,250 (Table 2). This consists of US\$ 384,000 cash and US\$ 74,250 in-kind contributions. The requested amount of GEF PDF-B grant is US\$330,000. The other cash contributions (co-funding) are from the EDP (US\$30,000), the EU (US\$20,000) and MOSTE (US\$4,000). MOSTE provides the in-kind contribution.

Table 1: PDF-B Workplan

Years:		2002				2003	
Activities:	quarters:	1	2	3	4	1	2
1	Description of policies and policy development	████████████████████					
2	Assessment of SME Institutions	██████████	██████████				
3	Information dissemination and awareness campaign	████████████████████					
4	Plan to develop coord. And management		██████████				
5	Assessment of training and capacity building	██████████	██████████	██████████	██████████		
6	Plan of Demo projects, pre-feasibility		██████████	██████████			
7	Workshops	██████████		██████████		██████████	
8	Identify national and international experts		██████████				
9	Prep. Project Brief and Full Project Document				██████████	██████████	██████████

Table 2: PDF B Budget (in 1,000 US\$)

Activities	GEF Grant	Co-Funding	Total Cash	Total In-Kind	Total
Policy development	10	14	24	12.5	36.5
Institutional strengthening	50	5	55	12.75	59.75
Information and awareness campaign	50	0	50	24	76
Training	75	5	80	6.5	92.5
Demonstration	60	30	90	11	101
Design project	85	0	85	7.5	92.5
Total	330	54	384	74.25	458.25

GEF VIET NAM OFFICE
67 NGUYEN DU STR. , HA NOI, VIETNAM
Tel: 84 4 822 4422- Fax: 84 4 8223 189

DATE: 6 August, 2000

From: GEF- Vietnam

To: Nandita Mongia, Ph.D - GEF Regional Coordinator for Climate
change - Regional Bureau for Asia and the Pacific - GEF

Fax: (212) 906-5825

GEF Secretary

GEF Council

*Ref: GEF- Vietnam Focal Point endorsement letter for the GEF
PDFB: Energy Conservation and Efficiency in Small and Medium Scale
Enterprises (SMEs)*

Dear Sirs,

As the representative for the Global Environment Facility Focal Point
for the Government of the Socialist Republic of Vietnam (GEF- Vietnam), I
would wish to confirm our strong endorsement of the PDF B: *Energy
Conservation and Efficiency in Small and Medium Scale Enterprises
(SMEs)*, which is prepared by Department for Science and Technology
Management in Industry, Ministry of Science, Technology and Environment.

The GEF- Vietnam hope very much that the proposal application will
be accepted and can be processed as early as convenient to speedily develop
this PDFB.

Thank you very much for your kind cooperation.

Yours sincerely,



Pham Khoi Nguyen

Chairman of GEF- Vietnam Committee

Vice Minister of Science, Technology and Environment

CC: - Department for Science and Technology Management in
Industry, MOSTE

- UNDP Vietnam

4th Draft (March, 2001)

Government Decree

No. /2001/N^o-CP dated: day/month/2001

on Energy Conservation and efficiency

The Government

- Based on the Government Organization Law dated September 30, 1992;
- In order to strengthen activities relating to Energy Conservation and Efficiency, meeting the increasing energy demand, and at the same time to protect well the environment for the sustainable socio-economic development;
- According to the recommendation by the Minister of Industry,

Decrees

Chapter 1

General regulations

Article 1

- 1) This Decree regulate the economical and efficient use of energy in all socio-economic activities as well as in the daily life of the people, especially, focus must be given to the energy conservation and efficiency in industrial production, in buildings, and in extensively energy consuming equipment and facilities.
- 2) All organizations and persons living and working in Vietnam have the obligations to use energy economically and efficiently, according to regulations under this decree.

- 3) Categories of energy subjected to the regulation of this decree, consist of:
- a) Fuel: Coal and products from coal, petroleum and products from petroleum, gas and other substance and resources used as fuel;
 - b) Thermal energy
 - c) Electric energy

Article 2

Economic and efficient use of energy is rational use of energy, aiming at reduction of energy consumption and energy cost of the operating equipment and facilities while assuring that needed energy demand for production processes, services and daily life is not cut off or reduced. The energy conservation and efficiency is implemented by following main measures:

1. Improvement and rationalization of fuel burning process;
2. Improvement and rationalization of heating and refrigerating process as well as process of converting heat into mechanical energy;
3. Reduction of heat losses during heat transmission
4. Reduction of energy consumption beyond use purpose
5. Reuse of waste heat
6. Improvement, rationalization of process of converting heat into electric energy;
7. Reduction of electric losses during electric energy transmission distribution and consumption;
8. Improvement, rationalization of process of converting electric energy into mechanical and thermal energy.

Chapter II

Economic and efficient use of energy in socio-economic activities

energy use in daily life, services and offices

Article 3

- 1) The State encourages the replacement of backward equipment and facilities with high energy consumption rate by the advanced ones with lower energy consumption rate, regardless they are used for lighting, ventilation, air-conditioning, water pumping or other domestic purpose, depending on the specific conditions of households, service organizations which are under different economic ownership, aiming at reduction of energy cost for households and service operations, thus contributing to the implementation of the State Energy Conservation Policy.
- 2) The State requests all the governmental institution offices to replace equipment and facilities with backward high energy consumption rate used in lighting, ventilation, water pumping and in other daily activities by advanced, having low energy consumption rate ones. Its aim is to reduce energy consumption level. Every year, the above-mentioned equipment and facilities should be repaired and maintained and the final replacement should be completed by the end of the year 2005. At that time, only equipment and facilities labeled as energy saving products are allowed to use in governmental institution offices.

Article 4

- 1) In coordinating with MOI, MOSTE organizes the formulation and issuing of National Standards on energy consumption norms for equipment and facilities needed to be specially managed. The list of the said equipment and facilities will be

worked out by MOI, which includes extensive energy consuming equipment and facilities or very popularly used equipment and facilities. If energy conservation measures are applied to them, great benefits will be brought in for the whole society.

- 2) The said standards on energy using norms should be technically advanced, economically rational, suitable for the development level of the society, and should be upgraded, improved so as to be, step by step, integrated into those of the region and of the world.

Article 5

- 1) Organizations, individuals engaged in production, import and trade of energy using products, have to specify the level of energy consumption, in their operation instruction, or trade mark labels, .
- 2) Based on the standards on energy using norms specified in Article 4 and legal regulations on product quality in terms of energy efficiency, organizations and individuals engaged in production, import, and trade of energy using products, have to announce the product quality in terms of energy consuming level , and have obligation to fulfill it. On the voluntary basis, organizations and individuals can register for certificates on energy consuming level of their products. Through testing and evaluating, products meeting energy saving criteria will be granted with certificates of energy saving and can be stuck with energy saving stamps
- 3) MOI is responsible for granting energy saving certificates to products meeting specified criteria. MOI, cooperating with MOSTE, identifies qualified Consultants who have juridical personality, for testing, evaluating products

which merit awarding of certificates and energy saving stamps.

energy using in factories and enterprises

Article 6

To promote the implementation of Energy Conservation and Efficiency in factories and enterprises by the following main measures:

- Rationally select economic structure, production line and product structure, so as to attain higher efficiency in energy use;
- Reducing all kind of energy losses in processes of energy conversion;
- Reducing energy consumption level by using technologies and equipment which have higher efficiency in energy use;
- Reducing energy consumption level by means of improvements and streamlining of production processes;
- Recovery of waste energy emitting to the ambient environment for reuse;
- Selection and rational replacement of energy sources in use so as to attain higher efficiency in energy use;
- Promoting the use of new and renewable energy sources, aiming at saving the non-renewable energy sources (such as coal, petroleum, gas)

Article 7

1) Factories and enterprises operating in the following sectors have to implement Energy Conservation and Efficiency:

- Production of commercial goods and services (including product processing units,

- product processing based on contract order, machinery and equipment repair workshops);
- Mine exploitation
 - Production and supply of electric energy
 - Production and supply of thermal energy.

2) The State manages and promotes the implementation of special measures of energy conservation and efficiency in *key energy using factories and enterprises*. The said key energy using factories and enterprises are factories and enterprises specified in point 1) (article 7) mentioned above, with following energy use levels:

- Annual consumption of fuel and total thermal energy equivalent to over one thousand five hundred tons of equivalent oil (1,500 TOE), or
- Electric power demand equal to or more than seven hundred fifty (750) kW or annual electric energy consumption is from four million five hundred thousand (4.5 million) kWh and more than that.

3) MOI gives guidance on procedures for entering or withdrawing from the list of *energy using factories and enterprises*.

4) MOI makes decisions on the entering or withdrawing off the said list, the names of the factories, enterprises in question, and informs the concerned ministries and provincial (and cities under the administration of central government) People's Committee, who have the responsibility of management of the said factories and enterprises, about these decisions.

Article 8

1) *Key energy using factories and enterprises* have to appoint full time personnel assisting the

director on energy management. The decision of personnel in charge of energy management has to be sent to MOI and line Ministry (or People's Committee of concerned provinces or cities under the administration of central government, in case of factories , enterprises are under the management of local Authorities).

- 2) The Manager of energy should have at least diploma of engineer, and has been trained in suitable energy disciplines.

Article 9

The energy manager in key thermal energy using factories and enterprises is responsible for assisting the Director in management and directing the repair and maintenance of fuel using equipment and facilities, in improvements and supervision of fuel using methods and in fulfilling other tasks given by MOI so as to use fuel and heat economically and efficiently.

The energy Manager in key electric energy using factories and enterprises, is responsible for assisting the Director in management and directing the repair and maintenance of electric energy using equipment and facilities, in improvements and supervision of electricity using methods, and in fulfilling other tasks given by MOI, so as to use electricity economically and efficiently.

Article 10

Every year, based on the content relating to the situation, conditions and efficiency of fuel, heat, electricity uses, the removal, improvement, replacement and new installation of fuel/heat/electricity using equipment and facilities as well as other equipment and facilities used for the purpose of economical and

efficient use of energy, specified by MOI, key energy using factories and enterprises have to report to MOI and line Ministries (or People's Committees of provinces and cities under the administration of central government, in case of factories and enterprises are under the management of local Authorities).

Article 11

- 1) In case that key energy using factories and enterprises do not fulfill entirely standards on energy consumption norms specified in point 1, Article 4 of this Decree, MOI (or DOI, when factories and enterprises are under the management of local Authorities), will request the key energy using factories and enterprises in question, to implement necessary works, and to make an EC&E plan (hereafter called "streamlining Plan") for consideration and approval.
- 2) In case that key energy using factories and enterprises do not fulfill entirely and seriously the streamlining plan, MOI (or DOI, when factories and enterprises are under the management of local Authorities) will give instructions so that they can properly implement the streamlining plan.
- 3) In case that key energy using factories and enterprises do not respect to the said instruction specified in point 2) above, MOI will consider for problem solving measures including imposing an administrative fines specified in Article 29 of this Decree.

Energy using in Buildings

Article 12

Organizations and individuals investing in construction of buildings (hereafter called the

owners) have obligation to implement EC&E by means of application of following measures:

- 1) Measures of increasing capability of thermal insulation, reducing the impact of outside heat sources which can transmit heat into the building through outside walls, doors, windows etc., thus reducing energy to be use for heating and cooling;
- 2) Measures of EC&E relating to air-conditioning equipment and other energy using equipment and facilities installed in the building (hereafter called air-conditioning system).

The above-mentioned air-conditioning system consists of:

- a) Air-conditioners and other mechanical equipment used for the purpose of ventilation;
- b) Lighting equipment
- c) Hot water supplying equipment;
- d) Lifts

Article 13

Ministry of Construction issues regulations on the EC&E measures in buildings specified in Article 12, that owners have to observe.

These regulations subjected to the modifications reviews so as to be suitable with the technical-technological, socio-economic development of the country during various stages of development.

Article 14

- 1) The design and construction of buildings and their components, have to observe standards on

energy rational use and other designing specifications of energy conservation

- 2) Regarding houses owned by households, MOC issues guidance encouraging the proper application of measures specified in Article 12, aiming at increasing capability of thermal insulation, reducing the impact of outside heat sources which can transmit heat into the building through outside walls, doors, windows thus attaining the purpose of energy economic and efficient use. However, air-conditioning equipment installed in the houses, should meet all requirements of measures specified in Article 12.
- 3) Design and construction of buildings mentioned in Article 15 is requested to have, compulsorily, a separate justification of energy rational use which is submitted to Department of Construction under the People's Committee of Provinces or Cities under the administration of the central Government for examination and approval.

The Authority in charge of examination and approval of the justification of the building energy economic and efficient use, is not allowed to approve any component work which do not meet the criteria of EC&E or do not observe the EC designing specifications

Article 15

Buildings which have total floor area of and over 1,000² (one thousand square meters) (hereafter called designated buildings), should be paid great attention to promote the EC&E measures

Article 16

In case that there are great faults in design and construction of designated building, relating to the EC&E measures, as specified in Article 13, MOC

should send written guidance to the designated building owner for implementation of necessary measures, aiming at reducing the impact of outside heat sources which can transmit heat into the building through outside walls, doors and windows etc., as well as of EC&E measures applied to air-conditioning equipment installed in the buildings.

Article 17

MOC issues regulations on quality and thermal insulation characteristics of building materials, gives guidance to organizations and individuals engaged in production, supplying and using of building materials so as to reduce the heat transmission through outside walls, doors and windows.

Energy using equipment and facilities

Article 18

Organizations and individuals engaged in production, manufacture, import and export of energy using equipment and facilities (hereafter called manufacturer) have the obligation of implementation of EC&E by means of improvement of operating as well as energy using characteristics of their manufactured or imported, exported equipment and facilities.

Article 19

1) Equipment and facilities which need to be strictly managed in terms of energy use, consist of transportation means (specified in special list) and other equipment and facilities which are commonly used through out the country, and annually consume a great deal of energy

(specified in special list), hereafter will be called as designated equipment.

- 2) MOI (coordinating with Ministry of transportation in case that relates to transportation means) issues regulations on obligation of manufacturers in assuring good operating and energy using characteristics of every designated equipment.
- 3) In case that there is a need of enhancing the advanced energy consuming level of the designated equipment, MOI will issue recommendations giving guidance to the manufacturer for the improvement of operating characteristics of the said designated equipment.

Regulations specified in point 2) above, have to be modified, reviewed so as to be suitable to the development status of the country.

Article 20

MOI, coordinating with Ministry of Trade, identify and disseminate following content for each designated equipment:

- Regulation on information, relating to the energy efficiency of the designated equipment, needs to be written in the trade mark label.
- Regulation on the procedure of labeling for high quality products in terms of EC&E, aiming at encouraging the participation of manufacturers in promotion of EC&E.

Chapter III

Measures encouraging, promoting EC&E

Article 21

Ministry of Finance proposes and submits to the Prime-Minister the policy measures supporting to EC&E, for consideration and approval. The policy measures are mainly formulated according to following orientations:

1) Benefits gained by the implementation of energy conservation measures (valued in money by cost-benefit analysis method, certified by Auditing Agency specified in Article 26), are not added to the tax-levied income, for a period of 5 years. Having implemented Energy Conservation measures, enterprises operating under the framework of the State-run Enterprise Law, are allowed to use 50% of the benefits brought in by these measures, for the first 5 years, for giving bonuses to people who directly implement these measures, for supplementing to the salary fund, well-fare fund; the rest can be invested in EC&E R&D, and production development.

2) Equipment, facilities, materials, production lines imported for the purpose of energy conservation, products listed in the list of energy saving products are encouraged to be produced and imported (hereafter called products), are exempted or reduced of import duties. In coordinating with other ministries, branches, MOI annually compiles a list of energy saving products, submits it to the Government for publicizing.

Ministry of Finance adds to the list of imported exported duties, duty rates for energy saving products, based on that, exemption and reduction of duties could be fixed.

3) Depending on conditions and needs, each locality, branch, production and business Group (large Corporation) could establish EC&E support Fund so as to support, encourage, promote energy conservation activities within their locality, branches, and groups. The said support fund can be mobilized from various sources: from the state

budget, contributions by energy suppliers, energy big users, manufacturers of energy using equipment, domestic and foreign organizations and individuals, and other sources.

- 4) Enterprises having investment projects on production of energy saving products, on importing new technology, or investment in depth, aiming at energy saving, are permitted to borrow preferential medium and long term loan from Development Support Fund, Science and Technology Development Fund, EC&E Support Fund. Loan amount can account for 70% of the total investment capital.

Depending on the capacity and the support objectives of the Funds, enterprises are entitled to following support modes: loan with common interest rate, preferential interest rate, support for the interest rate, guaranteed credit. Support modalities are based on the agreement between Funds and Enterprises through contracts which match the Fund operation mechanism.

- 5) Enterprises having new investment project for production of energy saving products are entitled to be considered for exemption or reduction of land rent, according to the Land Law.

Article 22

- 1) In the annual and five year ST&E Plans, Ministries, Branches and Localities should reserve proper percentage of allocated budget for research and development of science, technology serving the goal of EC&E. Attention should be paid to development, implementation of programs, projects promoting EC&E, concentrating on following contents:

1. Development of EC&E technology suitable to industrial branches which have important role in the national economy.

2. Introduction and application of EC&E technologies needed to be widely disseminated.
3. Providing information and giving guidance for collection and dissemination of information relating to technologies and organizations operating in EC&E domain.
4. Encouraging research development and application of following common techniques of EC&E:
 - a) Expansion of the application of co-generation (heat and electricity) where there are suitable conditions; centrally supplying heat to Industrial Parks; raising thermal efficiency for the turbine-generator units in thermal power plants; development of techniques using thermal energy through combined cycle such as co-supplying heat-electricity-refrigeration, co-supplying heat-electricity-coal gas; increasing efficiency of total using of thermal energy.
 - b) Raising efficiency of economic operation of energy supplying systems, raising efficiency of electric motors, fans, pumps; searching, exploiting, producing, and using high quality energy saving materials in order to increase efficiency of electric and thermal energy using
 - c) Development and expansion of advanced techniques of coal burning suitable to domestic coal which has high content of ash and S; application of technique of smokeless burning, burning gasified coal, liquefied coal, and clean coal in order to increase efficiency of coal using.
 - d) Development, expansion and application of other common EC&E techniques, the high

efficiency of which have been practically recognized. Application should be carried out in production, in daily life, especially in rural areas, remote areas, areas where people are suffered from hard and very hard conditions.

- 2) Taking initiative in mobilizing indigenous resources, strengthening research, application of technology, exploitation of energy sources on the spot, making full use of advantages of local energy, expansion of the use of combination of various energy sources which can be supplemented to each other, for the convenience of the locality, attaining high efficiency, and meeting requirements of environmental hygiene. Make full use, exploitation and development of new and renewable energy sources such as bio-gas, solar energy, geothermal energy, wind energy, hydro-energy, so as to meet the energy demand of the people.
- 3) Granting proper rewards to individuals/collectives who have made good contributions to the proposal, research and application of energy conservation measures, bringing in high economic efficiency.

Article 23

The State, through the education and training, the mass-media and other activities, tries to enhance the EC awareness of the people, encourage them participate in the EC&E activities.

The enhancing of people and generation by generation EC awareness should be carried out regularly, on the long-term basis, through the following measures:

- Integrating objectives, importance and content of energy conservation activities into training curricular of all level of secondary schools;
- Strengthening the training, building up and development of manager contingent, special in-charge of energy conservation and efficiency for enterprises, branches and localities
- Publicizing the content of EC&E through the communication program of the mass-media.
- Promotion of EC&E should be included in activity programs of Associations of Science and Technology, mass organizations. Organization of EC&E contests. Carrying out energy conservation campaigns with the motto "Energy saving for the benefits of each person and of the whole community".

Chapter IV

state management of EC&E

Article 24

- 1) It is proceeding to the establishment of an Interbranch Energy Organization in order to have the State unified management of energy, making good coordination among ministries, branches and localities. All EC&E activities through out the country are under the unified management of the said Interbranch Organization.

The Interbranch Energy Organization is headed by a deputy Prime-Minister; the members of which consist of representatives from MPI, MOSTE, MOF, Ministry of Defense, Ministry of Police, Ministry of Trade, MOI, Ministry of Agriculture and Rural Development, MOC, Ministry of Transportation, Ministry of Fishery.

2) In EC&E activities, the Interbranch Energy Organization has to fulfill the following tasks:

- a) To formulate and submit to the Government the Strategy on EC&E which is integrated into the "Long term strategy for sustainable energy development"
- b) To formulate and submit to the Government policy and policy measures on energy conservation, economic and efficient use of energy which is considered as part of the whole "National Energy Policy", and suitable to the development of the country, according to the 5 year and 10 year socio-economic plans;
- c) To formulate and submit to the Government the "Master Plan for Rational Development of Energy" having ten year cycle. Based on that Master Plan, the Government can adjust the Energy Development Plan. The Master Plan should scrutinize cautiously the following issues:
 - Economic structure shifting towards the orientation of energy conservation;
 - Increasing the efficiency of energy use;
 - Development of Technologies which use energy economically and efficiently;
 - Using alternative energy sources oriented towards economic and efficient use of energy;
 - Basic measures on management of economic and efficient energy use of equipment and facilities which over pass the norms of using fuel, thermal energy and electric energy;
 - Other necessary issues which can contribute to the promotion of EC&E

- d) Coordination among the Ministries, Branches and localities on the State Management of EC&E;
 - e) Formulation and submitting to the Government for approval of National Programs on EC&E. Organization of the implementation of these programs, coordinating and involving the participation of ministries, Branches and localities.
- 3) MOI is appointed as the Ministry in duty of the Interbranch Energy Organization for the management of EC&E. Ministries, Authorities having the same rank of ministries, Governmental Agencies, depending on their functions and powers, have responsibility to coordinate with MOI in fulfilling the task of State Management of EC&E within their management field.
 - 4) MOSTE, MOF, Ministry of Trade, MOI, MOC, Ministry of Transportation, the National Statistic General Department, the State Management Authorities resident in various provinces, cities have to implement Articles 4, 5, 7, 8, 11, 13, 14, 16, 17, 19, 20, 21, 26 of this Decree.
 - 5) People's Committees of provinces and cities under the administration of the central government, implement their State Management of EC&E functions within their areas;
 - 6) DOI and Department of Construction, on behalf of their People's Committee, under the direction of MOI, MOC, fulfil the State Management of EC&E at their areas, according to their sectoral management functions.
 - 7) Managerial functions and tasks of the local DOI and Department of Construction on EC&E are specified by People's Committees of Provinces and Cities under the administration of the central government, with guidance given by MOI.
 - 8) Regarding the State-run Enterprises, the energy conservation planned figures should be worked out

and specified in annual and 5 year plan, and are managed similarly to other planned figures. Heads of branches/localities make the units under their direction responsible for management of EC&E, so as to seriously, efficiently fulfill all EC&E planned figures.

Article 25

- 1) The State facilitates the step by step disposal and replacement of backward energy using equipment and facilities having too high energy consuming level, encourages the introduction of advanced, energy saving technologies and equipment. Produced, manufactured, imported, exported technologies, equipment have to be examined thoroughly, assuring their advanced specifications in terms of energy consuming level. Technologies, equipment backward in terms of energy efficiency, are not allowed to produce, manufacture, import and export.
- 2) Referring to the standards specified in Article 4, sectoral management Authority specifies ceiling energy consuming norm for each category of energy using equipment and facility which are commonly used in production (such as boilers, furnaces, refrigerating equipment, transportation means...). Organizations, individuals using equipment, facilities having energy consuming level higher than the specified ceiling norms, have to take improvement measures on or replacement of the equipment and facilities in question, aiming at lowering the energy consuming level until meeting the norms, within a specified period.
- 3) In every five year period, regularly, ministries examines and identifies equipment and facilities (used in production as well as circulated in the markets) having too high energy consuming level, need to be disposed, replaced. A list of the said

equipment, facilities should be compiled and submitted to the Government. Recommendations on specific problem solving should also be attached to the list.

Article 26

- 1) MOI, line ministries, DOI of provinces and cities under the administration of the central government, establish standing service groups or mobilize capable agencies/institutions for the energy auditing and monitoring in important energy users: *the key energy using factories/enterprises, and designated buildings.*
- 2) Ministerial Energy Auditing Teams carry out energy audit in enterprises/businesses under the management of the central government. The Energy Auditing Teams under DOI carry out the energy audit in enterprises/businesses under the management of local authorities.
In case of necessary, within its reference, MOI coordinating with concerned line ministries, organizes energy audit in designated enterprises/businesses.
- 3) Having implemented energy audit in selected areas, Energy Auditing Teams make annual energy audit reports and submit them to MOI and to their direct supervision authority.
- 4) Every year, all industrial production Units have to make statistic report on their situation of energy use, specific energy consumption (per product unit), to be submitted to MOI, or DOI of provinces or cities under the management of the central government, depending on the distribution of tasks. These reports should also be submitted to National Statistic Directorate, or local statistic Department.
- 5) The National Statistic Directorate, and local Statistic Departments, according to the distribution of tasks, coordinate, urge

industrial production enterprises to compile statistic figures on energy consumption, gather data for records, and periodically publish statistic publication on energy use, specific energy consumption of industrial production enterprises.

- 6) MOI specifies detailed specific content of the energy audit report. The National Statistic Directorate specifies the content of the energy statistic report.

Chapter V

Liability and regulation of fine

Article 27

- 1) In order to fulfill function and tasks specified in this Decree, in case of necessary, MOI requests factories, enterprises specified in point 1) article 7, to report on issues relating to their conditions, situation of production activities.
- 2) In order to fulfill tasks specified in article 11, in case of necessary, MOI requests key energy using factories, enterprises to report on their operating conditions and situation, or carries out the inspection at the site their energy using equipment and related records books, files. The inspection should respect the legal regulations.
- 3) In order to fulfill tasks specified in Article 6, in case of necessary, MOC requests the owner of the designated building to report about the design and construction of the designated building, or carries out inspection the building at site where it was built, checking the building design, building equipment and concerned materials. The inspection should respect the legal regulations.

- 4) In order to fulfill the tasks specified in Articles 19 and 20, in case of necessary, MOI requests the manufacturer of designated equipment to report on issues relating to the equipment operating characteristics, or carries out the checking up the designated equipment as well as concerned books, materials, at the manufacturer's office or in the manufacturer's store houses. The checking up should respect the legal regulations.
- 5) During the inspection/checking up at the sites specified in point 2) to point 4) above, inspectors from ministries should bring along with them their cards of authorized power, and in case of necessary show them to the concerned people.

Article 28

Key energy using factories, enterprises specified in Article 7 should manage the energy audit, fully fulfill all requirements for record books, monitoring and compiling energy consuming statistic data, as well as analyzing situation of energy use.

These factories, enterprises have to build up responsibility mechanism for each collective, individual involved in energy conservation work, set up modality of reward and fine for applying to collectives or individuals who have EC good performance or who have violated EC regulations.

Article 29

In case that key energy using factories, enterprises do not fully implement instructed energy conservation measures specified in Article 11, without any justified reason, MOI (or DOI in case of local enterprises) will examine the facts of not respect to regulations of this Decree, fix the time for the enterprises to complete the

correcting measures, and depending on the serious level of the violation, can impose an "administrative fine" ofVND.

Article 30

- 1) Organizations , individuals engaged in manufacture of equipment have to stop manufacturing, importing and exporting equipment which have been ordered to stop producing. All individuals, organizations have to stop using and are not allowed to transfer energy using equipment which are in the list of disposed equipment (stop using) specified in Article 25.
- 2) Regarding organizations and individuals who violate the regulations specified in point 1) above, MOI or DOI coordinating with concerned authorities, have the right to request the violated objects to stop producing, trading, importing, exporting using energy equipment which have been in the list of disposal, not allowed to further use, specified in article 25. In case of necessary, the equipment in question could be confiscated and an administrative fine amounting to 1 to 1.5 the value of the confiscated equipment could be imposed on violating person.
- 3) Regarding organizations and individuals violating regulations specified in point 1) concerning the transfer of equipment which have been ordered to be disposed, MOI or DOI ,coordinating with concerned authorities, have the right to confiscate the equipment in question/ the amount of money received from selling this equipment. At the same time, an administrative fine amounting to 1 to 1.5 the value of the confiscated equipment could be imposed on violating person.

Article 31

- 1) As manufacturer of designated energy using equipment specified in Article 19, organizations, individuals have to write down the energy consuming rate of the said equipment on their operating instructions as well as on the goods label as specified in Article 20.
- 2) As manufacturer of designated energy using equipment specified in Article 19, organizations, individuals are not allowed to use fake goods stamps and certificates, energy saving quality blank certificates and stamps (using stamps and certificates without testing the equipment)
- 3) Regarding Organizations, individuals violating regulations specified in point 1) above, concerning not writing energy consuming rate on the operating instructions and goods labels, MOI (or DOI) with their authorized power, will fix the time for the violating person to correct their faults. If this measure could not bring in good result, MOI (or DOI) will examine the serious level of the violation, and could impose an administrative fine amounting to.....VND.
- 4) Regarding organizations, individuals violating regulations specified in point 2) above, concerning the use of fake or blank energy saving quality certificates and stamps, if disclosed, the Market Management Authority could impose an administrative fine amounting toVND, on the violating person. In case of serious violation, violating person could be prosecuted according to criminal proceeding, based on criminal law.

Article 32

Implementing their function and tasks of management of EC&E, the State officials who have good contributions, could be examined for rewards; in case of abuse of power, selfishness,

irresponsibility, if there is enough suitable criminal evidence, they could be accused according to criminal proceeding, if there is not enough criminal evidence, they would be examined for a discipline or an administrative fine.

Chapter VI

execution provision

Article 33

This Government Decree takes effect 15 days after its promulgation

**for the Government
Prime-
Minister**