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PROJECT

Barriers Removal to the Cost-Effective Development and Implementation of Energy Efficiency Standards and Labeling (BRESL)

PROJECT KEY RESULTS AND LESSONS LEARNED



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ABBREVIATIONS

ASEAN	Association of Southeast Asian Nations
BRESL	Barriers Removal to the Cost-Effective Development and Implementation of Energy Efficiency Standards and Labeling
CFL	Compact Fluorescent Lamp
CO₂	Carbon Dioxide
EE	Energy Efficiency
EEC	Energy Efficiency and Conservation
EECO	Energy Efficiency and Conservation Office
ES&L	Energy Efficiency Standards and Labeling
GEF	Global Environment Facility
GHG	Greenhouse Gas
IEC	International Electrotechnical Commission
MEPS	Minimum Energy Performance Standards
MOIT	Ministry of Industry and Trade
MOST	Ministry of Science and Technology
PMU	Project Management Unit
RPMU	Regional Project Management Unit
RRT	Round Robin Test
RTWG	Regional Technical Working Group
SMART	Specific, Measurable, Achievable, Realistic and Timely
TWG	Technical Working Group
UNDP	United Nations Development Programme
VNEEP	Viet Nam National Target Programme on Energy Efficiency and Conservation

INTRODUCTION

The project “Barriers Removal to the Cost-Effective Development and Implementation of Energy Efficiency Standards and Labeling” (BRESL) is a regional project funded by the Global Environment Facility (GEF) through the UN Development Programme (UNDP). In Viet Nam, the project has been managed and implemented by the Ministry of Industry and Trade (MOIT) from 2009-2014. The BRESL-Viet Nam project, with 16 activities in five components, has achieved the basic targets set for each component, including on i) establishing a legal base and regulations to remove low efficient energy consuming technologies while encouraging high energy efficient ones; ii) developing the capacity of organizations and individuals to ensure full enforcement of legal regulations in implementing energy efficiency standards and labelling (ES&L); iii) providing information and technical support to domestic manufacturers of targeted products; iv) joining regional cooperation; and v) successfully implementing pilot projects on government procurement, building a database, sharing information and increasing public awareness of ES&L. The results of the five components have contributed to achieving the main objective of the project, which is to remove barriers for developing and implementing ES&L projects in Viet Nam. The project has surpassed the goal of reducing total greenhouse gas (GHG) emissions in Viet Nam from thermal electricity and the use of electrical appliances and equipment in residential, commercial and industrial activities in Viet Nam by 0.6 million tons of carbon dioxide (CO₂).

The biggest success of the project has been the strong promotion of energy labeling practices in Viet Nam for 14 product groups, including seven targeted product groups. It has had a significant impact on Vietnamese society and has contributed to the success of the Viet Nam National Target Programme on Energy Efficiency and Conservation (VNEEP).

The success of the project is largely due to the contribution of various stakeholders, including socio-political organizations, a positive response from society, and the active participation of businesses and manufacturers.

The project has received direction from and been closely monitored by the Government, through MOIT.

The project acknowledges the vital contribution of MOIT and the national Project Management Unit (PMU), under the direct guidance of the Department of Science, Technology and Energy Saving of the Viet Nam Directorate of Energy. There has also been an effective cooperation with the Ministry of Science and Technology, Directorate of Standard Quality and Measurement, the Viet Nam Standard and Quality Institute and the Dien Quang Lamp Joint Stock Company, who are the main stakeholders in

implementing the BRESL-Viet Nam project, as well as with other ministries and local People's Committees in project development and implementation.

The project greatly appreciates the coordination of UNDP, through the Regional Project Management Unit (RPMU) of BRESL, and the assistance of regional member countries. The project also highly appreciates the effective coordination and assistance of UNDP Viet Nam.

Finally, the project would like to acknowledge the great effort of the energy efficiency testing centers, including Quatest 1, Quatest 2, Quatest 3. Vinacomin..., which is one of the vital factors contributing to the success of the energy labeling practice.

1. GENERAL INFORMATION

Project Overview

Name	Barriers Removal to the Cost-Effective Development and Implementation of Energy Efficiency Standards and Labeling (BRESL)
Sponsor	Global Environment Facility (GEF), through the United Nations Development Programme (UNDP)
Project management unit in Viet Nam	Ministry of Industry and Trade of the Socialist Republic of Viet Nam
Project implementing organization in Viet Nam	Department of Science, Technology and Energy Efficiency and Conservation, Energy Efficiency and Conservation Office, Directorate of Energy
Other alliance organizations of the project in Viet Nam	Ministry of Science and Technology, Directorate of Standard, Measurement and Quality, Standard and Quality Center of Viet Nam, Dien Quang Joint Stock Company
Regional implementing organization	The Chinese National Development and Reform Commission
Timeframe	5/2009 – 12/2014
Project location in Viet Nam	Nationwide
Project location in the region	Bangladesh, Indonesia, Pakistan, Thailand, China and Viet Nam
Expected budget	
Project in Viet Nam	Total: US\$ 3,735,000 including: ODA (GEF): US\$ 650,000 Local contribution: US\$ 3,085,000
Projects in Asia	Total: US\$ 35,880,900 including: ODA (GEF): US\$ 7,800,000 Local contribution: US\$ 28,080,900
ODA contribution	Non-refundable

Project Goal

The goal of the project in Viet Nam is to reduce GHG emissions by an estimated 0.6 million tons of CO₂, arising from the generation of electricity from thermal power plants and used in appliances and equipment in the residential, commercial and industrial sectors of the country.

Project Objective

The key objective of the project is to remove barriers that have persistently hindered the widespread development and implementation of energy standard and labeling programmes in Viet Nam.

Project Structure

In order to successfully achieve the goal and objective, this project is designed with five components that interact with each other. These components are:

ES&L Policy Making Programme – Establishment of legal basis for standards and labels and assisting with the development of regulations for targeted products.

ES&L Capacity Building Programme – Building of institutional and individual capacity to secure on-the-ground implementation of standards and labels, including establishment of regional working groups for each of the targeted products.

ES&L Manufacturer Support Programme – Information and technical assistance for local product manufacturers to help them develop efficient products and realize profit opportunities from efficient products.

ES&L Regional Cooperation Programme – Regional cooperation activities that will aid individual countries with development and implementation of their ES&L programmes and that will take important steps towards regional harmonization of standards and labels.

ES&L Pilot Projects: Pilot activities implemented on a demonstration basis by individual countries, or groupings of countries, showcasing various aspects of the design, facilitation and implementation of ES&L programmes, including support activities that build on the regional foundation provided by BRESL.

Project Target Products

The project supports seven targeted product groups including: (i) air conditioners, (ii) fluorescent and compact fluorescent lamps (CFLs), (iii) fluorescent lamp ballasts, (iv) electric fans, (v) electromotors, (vi) refrigerators, and (vii) rice cookers.

2. PROJECT RESULTS

2.1. Implementation of Project Targets

2.1.1. Implementation of Project Objective

The main objective of BRESL has been clearly stated in its title: Barriers Removal to the Cost-Effective Development and Implementation of Energy Efficiency Standards and Labeling.

After five years of operating, the project has contributed positively to removing barriers for the implementation of the ES&L programme in Viet Nam. These results have been achieved through technical assistance to government agencies, organizations and businesses, in the areas of (i) improvement of legal framework for ES&L programme in Viet Nam; (ii) training and enhancing capacity of organizations and individuals participating in the ES&L programme; (iii) communications to raise public awareness; (iv) assistance in development of ES&L roadmap; (v) revision of and developing energy efficiency (EE) standards; (vi) guiding manufacturers and importers in labeling procedures for the equipment and appliances that have to be labeled; (vii) technical assistance to manufacturers of EE products; (viii) transferring lessons learned from other countries, especially of those participating in the regional BRESL network, and applying them to the Viet Nam ES&L programme; (ix) deploying pilot projects within the framework of the ES&L programme; (x) and implementation of labeling for products circulating in the market.

2.1.2. BRESL-Viet Nam's Contribution to the General Goal

Reduction of GHG emissions

The contribution of BRESL-Viet Nam to the general goal, according to the project document¹, is evaluated based on the Electricity of Viet Nam (EVN) indicator of a total electricity consumption reduction in residential, commercial and industrial areas.²

The total GHG emission reduction in the five-year period from 2009 to 2013 is 2.825 million tons of CO₂, surpassing the expected target of a reduction of approximately 0.6 million tons of CO₂. The electricity saving of each sector or energy labeled product has not been disaggregated from the total energy saving.

1 See: *BRESL_Detailed Project Outlines_MOIT, June 2007*

2 Annual Report of EVN; website <http://tietkiemnangluong.vn>.

Sale volume of energy labeled products increased

ES&L has had a direct impact on the market of EE product trading. BRESL-Viet Nam carried out surveys on sales in a number of leading electronic and hardware stores in Hanoi and Ho Chi Minh City. The surveys led to the conclusion that the sale of energy labeled products, such as televisions, air conditioners and electric fans, had increased by 10-15 per cent from January to early March 2013.



According to a reputable air conditioner distributor³, despite the economic downturn, the sale of air conditioners in the first six months of 2013 was still 1.3 times higher than in the previous year. In addition, even though the price of energy labeled products had increased, consumers still preferred energy labeled products to non-labeled ones.⁴ Information from the Energy Efficiency and Conservation Office (EECO) of MOIT shows that more than 90 per cent of air conditioners in supermarkets and electronic and hardware stores have been energy labeled.

A high electricity price is one of the main reasons for consumers to choose energy-efficient products. According to surveys of leading supermarkets⁵, during the last two to three years, consumers have paid more attention to energy efficiency when choosing electronic equipment and are more likely to purchase energy labeled products. Many consumers said that energy labels gave more quality assurance than advertising by sellers. The more stars the product has, in other words the more energy efficient it is, the more preferable the product is to consumers.

3 Source: <http://tietkiemnangluong.vn>

4 Source: website <http://tietkiemnangluong.com.vn>

5 As above and website <http://nhannangluong.vn>

2.2. Results of Implementation of Project Components

2.2.1. Component 1

ES&L Policy-Making Programme

Component 1 aims at accelerating the legal and regulatory basis for removing the lowest EE technologies from the market and encouraging the development of high-efficiency technologies, and assisting with the development of regulations for seven BRESL product groups, including: (i) air conditioners, (ii) fluorescent lamp ballasts, (iii) electric fans, (iv) electromotors; (v) refrigerators, (vi) fluorescent lamps and compact fluorescent lamps, and (vii) rice cookers.



Component 1 achieved the targets related to the seven groups through the following indicators as set out at the design of the project.

- ES&L principles have been institutionalized and enforced in the third year of the project in Viet Nam;
- Energy labeling programmes have been approved in the third year for air conditioners, refrigerators, electromotors, electric fans, rice cookers, CFLs and fluorescent lamp ballasts;
- The electricity loss of ballasts has been reduced by 30 percent;
- EE standards for the targeted products have been approved in the third year of the project; and
- Energy labels have been applied to at least two product groups in the fifth year.

Details of these results are elaborated below.

Improvement of the policy framework

BRESL-Viet Nam had made a significant contribution to developing legal documents regarding ES&L in Viet Nam. These are especially helpful considering that ES&L is a new area to most government agencies, organizations, businesses and citizens in Viet Nam. During three years (2010-2012), a set of legal documents were established, creating an enabling environment for implementation of the labeling programme, including the labeling roadmap and management of ES&L activities.

The labeling roadmap adopted in the 2011 Decision No. 51/2011/QĐ-TTg on the “List of equipment and appliances that have to be labeled and the roadmap for implementation” was drafted based on survey results of 4,939 households in 16 provinces and cities throughout the country (see Appendix VI), which was carried out by BRESL-Viet Nam in 2009.

In addition, BRESL Viet Nam has supported the review, drafting and revision of the following documents:

- MOIT Circular No. 07/2012/TT-BCT dated April 2012 on procedures for energy labeling, EE product testing, label certification granting and the method of label sticking



Nhãn năng lượng xác nhận.



Nhãn năng lượng so sánh.



- Decree No. 21/2011/ND-CP dated March 29, 2011, detailing the Law on Energy Efficiency and Conservation and measures for its implementation
- Decree No. 134/ND-CP dated October 17, 2013 about Regulation on penalty in energy efficiency and conservation

The key legal documents related to ES&L are listed in Appendix I.

BRESL-Viet Nam has carried out interviews with around 1,700 individuals, including government officials, businessmen, students and housewives on the selection of energy labels.

Two groups of label designs, including one endorsement label template and 19 comparative label templates, corresponding to each group of products that had to be labeled, were introduced. BRESL-Viet Nam carried out the design and recorded 500 CDs, which were sent to stakeholders and enterprises. The endorsed label features a triangle shape (the symbol of a green house) and an orange coloured star (see Appendix II). These labels were approved by MOIT to be applied to the labeled products. Guidelines recognizing energy labels were edited and published by BRESL-Viet Nam and were widely distributed to manufacturing and importing organizations, as well as to local agencies to inform the public throughout the country.

Issuance of detailed label guidance

BRESL-Viet Nam, in co-ordination with EECO of MOIT, studied and amended the contents of MOIT Circular No. 08/2006/TT-BCT, and then submitted to the Ministry a new circular (No. 07/2012/TT-BCT dated April 2012) on procedures for energy labeling, product EE testing, label certification granting and the method of label sticking, replacing the old one.

Based on the regulations of Circular No. 0/2012/TT-BCT, BRESL-Viet Nam helped draft 12 documents guiding in detail the labeling procedures for products to be labeled and which were listed in the Prime Minister Decision No. 51/2011/QD-TTg; and then trained enterprises on the practical application of these guidelines and online registration through the website <http://nhannangluong.vn>.

Guidance for the application and registration of energy labeling Support to development of 29 newly built/ amended EE Standards

Over three years (2010-2013), in co-ordination with EECO of MOIT and the Directorate of Standards, Quality and Measurement of the Ministry of Science and Technology (MOST), BRESL-Viet Nam helped amend and develop 29 standards for minimum energy performance standards (MEPS) and testing methods, which closely followed the labeling roadmap defined in the Prime Minister Decision No. 51/2011/QD-TTg and Decision No. 03/2013/QD-TTg on List of equipment and appliances that have to be labeled and the roadmap for implementation. New standards were developed based on the application of IEC standards, with consideration given to ASEAN and Asian standard harmonization⁶.

From 2010 to 31 December 2013, BRESL-Viet Nam and EECO of MOIT have guided hundreds of manufactures and importers of energy consuming equipment to prepare applications for energy labeling registration. They have also made an evaluation of and submitted applications to MOIT for the granting of energy labelling licenses for 4,686 models in 14 product groups. Labeling implementation has since passed the voluntary phase (2010-2013) and from July 2013 entered the compulsory phase.

From the start of the compulsory phase (July 2013) to the end of June 2014, an additional 3,196 product models were registered and received a license grant from MOIT for labeling, raising the total product models labeled to 6,268 (from 2010 to 2014).



⁶ Energy efficiency standards for electromotors, high efficiency tubular fluorescent lamps and ballasts were first developed and published in 2005 in Viet Nam. In 2007 there was an addition of three standards published for electric fans, air conditioners and refrigerators.

2.2.2. Component 2

ES&L capacity building programme

Component 2 aimed at developing the capacity of organizations and individuals to ensure full compliance with legal regulations, as well as ES&L programme implementation, based on the following indicators:

- Readiness of testing standards and equipment in Viet Nam;
- Readiness of signed and enforced mutual recognition agreements regarding product testing and information of certificate granting among the countries participating in the BRESL project;
- Developing and publishing information on energy certifying procedures and certified products online; and
- Readiness of the system and level of data collection and reporting.

Strengthen and enable public institutions to support development and implementation of es&l

Since the start of the project, BRESL-Viet Nam has nominated three government officers to join the Regional Technical Working Group (RTWG). One is a senior policy maker, while the other two are senior engineers in lighting and electromotors. Three Vietnamese technical experts were nominated by BRESL-Viet Nam to participate in the RTWG. RTWG has resulted in over the period of the project.

During 2009-2014, 43 government officers and technical experts participated in 14 ES&L training courses and workshops conducted overseas by the RPMU. Participants came from the ministries of justice, science & technology, planning & investment, and transport, provincial departments of industry & trade, construction and finance, as well as from EECs and



EE testing laboratories who directly manage and co-ordinate the national ES&L programme at national and provincial levels. The regional training programme has provided experiences on ES&L implementation in some other countries and shared testing procedures among participating countries.

There were also a number of national training courses provided by BRESL-Viet Nam in all areas across Viet Nam. The main target candidates of these training courses are officers from ministries and sectors, officers from provincial departments of industry & trade, construction, transport, agriculture & rural development, natural resources



& environment, and science & technology, as well as district People's Committees and provincial branches of Standard Quality and Measurement Directorate. The content of the training courses includes ES&L legislation and regulations applicable to the energy efficiency and conservation (EE&C) area in general; EE standards; energy labels and the roadmap for labelling; state management in the energy saving area and energy labeling; the responsibility of organizations using government budget (in relation to regulations on procurement of EE products for government administrative institutions); and sanctions for administrative violations in the energy saving and energy labelling area. In total, **21 domestic training courses and workshops were provided by BRESL-Viet Nam to 1,317 people**. Officers and technical consultants who received training play an important role and are actively participating in energy efficiency and conservation activities in general, as well as in the ES&L programme, contributing to the development and maintenance of ES&L operations in all provinces and cities nationwide.



Appointment of ee testing laboratories



BRESL-Viet Nam has engaged in a survey of the capacity of laboratories available for testing of each energy-consuming product group in Viet Nam.

A total of 27 laboratories were examined, including those under direction of government agencies, universities, research institutes, businesses and other organizations. The evaluation was conducted on testing

procedures in terms of the similarity of tests and real use product conditions, the ability of laboratories to simultaneously test numerous samples, the errors in results between different tests of the same product, and the cost and timeframe of the test. In addition, the ability of each testing center participating in the labeling programme for specific products was also evaluated. A survey and preliminary estimation of the need for investment in new testing facilities to meet future requirements was also carried out. Based on the results of this survey, BRESL-Viet Nam submitted to MOIT a proposal to nominate the qualified testing laboratories for the ES&L programme. In 2011 and 2012, seven testing centers, five national ones and two overseas, were nominated by MOIT.

BRESL-Viet Nam nominated three experts from the Hanoi Electric Power University, the Technical Center of Standard Quality and Measurement (of MOST), and the Viet Nam Research Institute of Industrial Strategy and Policy to join the BRESL RPMU in studying the possibility of ES&L standard harmonization and conducting a capacity assessment of Viet Nam testing bases.

A study on the harmonization of standards for round robin tests (RRT) was conducted in 2012 between China, Indonesia, and Viet Nam, aiming at the harmonization of EE standards, experience exchange between testing laboratories and unification of testing procedures for two products, electric fans and rice cookers. A mutual agreement was signed by countries joining the RRT. Study tours to exchange experience of EE testing with international experts and technicians from BRESL member countries had a positive effect on increasing the capacity of the Directorate of Standard Quality and Measurement of MOST and testing centers in Viet Nam. Energy efficiency testing for the same product line was also implemented

in different national testing centers (domestic RRT), in order to give Vietnamese testing engineers and technicians the opportunity to exchange experiences and gain more knowledge in examining processes. RRT activities also help testing centers to standardize testing procedures to minimize testing variances. Testing reports of RRT participants showed that the variance gaps were small and within the expected range. These variances did not affect the energy efficiency rating of products, which is expressed by the number of stars stamped on the product. The Vietnamese testing report follows the regional testing report format.

Looking back at the labeling results for electric fans and rice cookers in 2012-2013, most of the products received endorsement labels. This means that these products have achieved a high energy efficiency rating.



2.2.3. Component 3

ES&L producer supporting programme

Component 3 aims at providing information and technical support to domestic manufacturers of seven BRESL product groups in order to ensure that at least two domestic manufacturers start producing energy efficiency certified products, and that they add at least another six models to their product line. The aim is also to ensure that the manufacturing output of high energy efficiency products increases by at least 25 per cent in the fifth year, and that half of manufacturers would agree that ES&L can help them to increase profits.



BRESL-Viet Nam has provided information and guidelines for manufacturers and importers in terms of labeling application and requirements through various workshops and training courses, as well as the distribution of technical and awareness raising manuals. During 2009-2010, through such activities, enterprises gained a gradual understanding of EE labeling benefits and requirements and started being engaged in the process. Two electric fan manufacturers registered to join the voluntary energy labeling programme as the first pioneer enterprises – the Viet Nam Electric Fan Company and Tan Tien SK Ltd Co. At the end of 2010, based on a proposal by BRESL-Viet Nam, the Minister of Industry and Trade issued Decision No. 7005/QĐ-BCT, which endorsed energy labeling for 32 product models of electric fan manufacturers, including standing fans, desk fans and ceiling fans.

Considering the capacity of domestic EE testing centers, as well as requests from enterprises, in January 2013 the Prime Minister issued Decision No. 03/2013/

QĐ-TTg and amended Decision No. 51/2011/QĐ-TTg to extend the voluntary phase for household appliance labeling until July 2013 (instead of the end of 2012). In the case of refrigerators, the voluntary phase was extended until 1 January 2014. This action can be seen as a positive contribution of BRESL-Viet Nam to Government policy decisions, by ensuring feedback from workshops and the capacity of testing centers which were surveyed by BRESL-Viet Nam was taken into account.

In conclusion, the project made a positive contribution to Activity 3.2 “Providing manufacturers with training in standard effects and way to increase profits by using standards”. A total of **16 workshops were held** between 2009 and 2013, with **1,200 participants, most of whom came from targeted energy labeled product manufacturers and importers**. Government ES&L policy, new energy efficiency standards, and energy labeling procedures and incentives were communicated to business representatives in workshops, which helped the energy labeling programme achieve positive results. Activity 3.1 “Analyzing and making technical reports for each of the six targeted product groups, and making technical reports that help to improve energy efficiency of products while reducing related costs”; and Activity 3.3 “Providing technical support for domestic manufacturers in order to remove technical and financial barriers to increasing energy efficiency for residential appliances and industrial equipment” achieved modest results. The main result is an evaluation report on technical assistance for fan manufacturers in Viet Nam and potential solutions for improving the energy efficiency of electric fans. The project also supported the compilation and dissemination of training materials for fan manufacturers on energy efficiency improvement solutions.



2.2.4. Component 4

Regional ES&L cooperation programme



Component 4 aims at extending cooperation within the region, sharing information (through websites) and maximizing the results of activities (such as sharing lessons learned of other member countries in the project).

ES&L regional cooperation was a core part of the project and has been a part of all project components, especially Component 2 on ES&L capacity building.

A document on “Lessons Learned from ES&L Implementation for BRESL Countries” produced by the RPMU has been shared with all country members (Bangladesh, China, Indonesia, Pakistan, Thailand and Viet Nam). This document provides information on the basic concepts of the ES&L programme, the successful experience of some countries, such as the US, Japan and Korea, and the current situation of the six country members of BRESL.

BRESL-Viet Nam has actively participated in regional joint activities through participation in the technical working group (TWG), training, research and testing. BRESL-Viet Nam has assisted and supported three technical experts who regularly join the activities of the regional TWG. Work on energy standard harmonization in the region, testing report format standardization, and round robin testing of rice cookers and electric fans between Viet Nam, China and Indonesia was organized by

the TWG, in the scope of regional cooperation. Vietnamese representatives in the TWG have made a contribution to mutual activities through information presented in TWG meeting reports, such as the progress of energy labeling in Viet Nam, analyses of EE standards for the seven product groups, and testing report forms suitable to Viet Nam EE standards, as well as attendance in regional meetings and discussions on the outputs and recommendations of project feasibility studies. The QUATEST 1 testing center also completed an energy efficiency test for electromotor models, requested by the RPMU, for cross testing of the same product.

A regional ES&L network was established and made contributions to a standard harmonizing programme and the unification of the testing method for electric fans, rice cookers and CFLs. REESLN is formed and shall be operated exclusively as a non-profit, and business-oriented foundation. REESLN therefore aims at four important goals: a) Relevant and accurate EES&L data and information; b) better access to and exchange of information; c) availability of training and technical assistance; and d) greater impact on energy savings and GHG reduction. The two selected experts from Vietnam has contributed to the completion of three harmonized EE standards on fan, rice cooker and CFL that will be used as references for participating countries in developing and revising EE standards. An initial report on next steps for regional activities (BRESL 2nd phase) was discussed by the regional network in early 2014 and is being finalized for submission to GEF.

Component 4 on the “ES&L regional cooperation programme” acted as a catalyst to boost ES&L activities in each member country and maximize project results.



2.2.5. Component 5

ES&L pilot projects

Component 5 focuses on efforts to influence the development and implementation of ES&L programmes related to government procurement policy, developing and encouraging the use of an online database on energy saving, and developing and implementing training programmes for consumers on high EE products.

Development and implementation of government procurement schemes

Based on the Law on Energy Efficiency and Conservation, BRESL-Viet Nam supported MOIT in drafting a list of energy efficient equipment which could be purchased by State-budget using entities. According to this, from January 2013 government-funded agencies and organizations procuring energy consuming equipment shall choose products labeled with an endorsed energy label (Energy Star labels) or a five-star-energy comparative one.

The Prime Minister Decision No. 68/2011/QĐ-TTg is to be applied in case of purchasing energy efficiency products for a new investment project or replacing damaged and outdated ones in an existing office. The Decision clearly expressed the Government view that government-funded agencies and organizations ought to be exemplary in energy efficiency and conservation in general, and actively support ES&L activities in particular.

Development and implementation of online database on efficient equipment and promotion of use

BRESL-Viet Nam has developed an energy database system, available at <http://energydata.vn>, for collecting, processing and managing EE data. Annual reports of hundreds of energy-consuming product manufacturers and importers have been collected, processed and posted on the website. The website includes a wide range of information, exceeding the scope of data related to just the energy labeling programme.

Training courses for reporting data and inputting it into the database were provided to local agencies. Participants of these courses were officers of Departments of Industry and Trade (the main agencies responsible for managing and auditing data collection and verifying each province and city), as well as enterprise engineers who are responsible for annual reports in accordance with guidance of the database.

The BRESL-Viet Nam website (<http://nhannangluong.vn>) was particularly

designed for the ES&L programme in 2011, and has served as an online portal for businesses to undertake labeling registration and post their contact information and supporting requests for energy labeling activities. Information on energy labeling guidance and the number of labeling certified products of each business was updated by the PMU on a daily basis, and the website is both a technical support and a way to encourage businesses to participate in ES&L in Viet Nam.

The two websites made a great contribution to managing the operation of the ES&L component within VNEEP in general and the BRESL-Viet Nam project in particular. Data from hundreds of energy-consuming product manufacturers and importers has been collected since 2012, and has been highly helpful for the project.

Development and implementation of consumer education scheme for energy efficient products

In parallel with implementation of ES&L activities, a campaign on popularizing the energy labeling programme and training to increase awareness of consumers of high energy efficiency products was organized by BRESL-Viet Nam for all 63 provinces and cities nationwide.

The event at which MOIT granted energy labeling certificates to the first three voluntary electric fan manufacturers was organized by BRESL-Viet Nam. It attracted the attention of a large number of interested stakeholders and acted as a positive kick-off to the start of the programme.

The first three TV scripts to introduce the energy labeling programme were televised in late 2011, and a regular TV series on the same topic on both national and local channels started a bit later. Energy label designs were also popularized in 2011.

A guideline to recognizing the energy labels of eight products (i.e. electric fans, rice cookers, CFLs, ballasts, TVs, air conditioners, refrigerators and washing machines) was published by BRESL-Viet Nam and recorded on 500 CDs. A manual introducing the detailed designs and use of the three label samples was also developed and distributed to businesses.

Four different leaflets (of 40,000 copies), which help users quickly recognize energy labels on products and purchase energy efficient ones, were printed and shared with local authorities and distributed to consumers through supermarket chains, mass organizations and socio-political organizations such as: women association, EVN, energy efficiency association...

Promotion events including “a green shop” or road show was conducted in Ho Chi Minh City in cooperation with EVN and local women association in order to introduce energy labeled products to consumers More than 2,500 copies of a manual on energy efficient lifestyles were distributed through these events.

In conclusion, Component 5 of the project was effectively implemented and achieved all of its set targets. From a pilot programme on voluntary energy labeling initiated for only CFLs and electric fans in 2010, the programme gradually expanded to 14 product groups, including seven BRESL targeted product groups, by the end of 2013.

3. LESSONS LEARNED

3.1. ES&L policies should be institutionalized through a complete, comprehensive and powerful legal system

Applying ES&L is a large-scale programme which can deeply impact society. The programme ought to make a change in public consciousness from the beginning, then gradually evolve from awareness to actions to get a positive response and by this provide real benefit for manufacturers, consumers and society. The BRESL project was designed with a holistic approach, moving from policy support to implementation and public awareness raising. BRESL-Viet Nam addresses a component of ES&L in the VNEEP. The project was started when the VNEEP was in its third year of implementation and it has had a great influence on the progress of the VNEEP, especially in terms of applying ES&L. This has been enabled thanks to a highly effective and enforced legal system, headed by the Energy Efficiency and Conservation Law. This is one of the most important conditions without which no individual project would be able to achieve comprehensive and sustainable results.

3.2. Socio-political and mass organizations are important forces for implementation of projects which have an impact on society

Communication activities to raise public awareness of the benefits of the ES&L programme was the key factor necessary to achieving the project's success. In Viet Nam, socio-political and mass organizations and media channels (such as TV, radio and the internet) were especially suitable for education activities to increase public awareness. Both communication channels (socio-political and mass organizations as well as media channels), with their own networks to reach every village and suburb in Viet Nam, were effective. The Viet Nam Women's Union, the Ho Chi Minh Communist Youth Union, the Farmers' Association and the Veterans' Organization ..., through their quarterly and monthly activity programmes, disseminated information and encouraged public participation in government policies, including on EE&C and ES&L implementation. For projects with high social value, like ES&L, good coordination with social organizations will help to bring about good results.

3.3. Consideration of a sufficient financial source to encourage counterparts and enterprises

The ES&L project will bring about benefits to businesses in the long term. High energy efficiency products will help to increase competition advantages, market share and income for businesses. However, in the short term, businesses face pressure from energy labelling, such as expenses to change technologies, and redesign and produce higher efficient products. In addition, the general nature of many businesses is to 'wait and see', and a combination of enforcement and encouragement policies is therefore useful. The annual project report of the BRESL PMU in 2012 echoed

this: “Manufacturers and importers have the psychology to compare and wait for each other and for a government agency decision in implementing ES&L. This is the reason why in the transition to the enforcement period, there were plenty of volunteer energy labeling registrations that were submitted to MOIT at the last minute.” The report suggested that “MOIT should have a detailed and complete plan to support manufacturers and importers in implementing energy labeling projects. Barriers and difficulties of businesses in following and implementing ES&L should be collected and analysed in order to provide suitable and on-time support and policies.”

Businesses are usually short of funds to invest in long-term changes in technologies, designs and products, and this is the main pressure and requirement of the ES&L project. Locating enough funds to provide financial support for businesses in financially difficult times would be a necessary move for the project to successfully achieve its targets in each of the components, as well as the project objectives in general. This strategy should also be applied to encourage participation of other alliances in the project (such as institutions, universities, energy conservation centers and NGOs) that are operating as administrative not-for-profit organizations.

3.4 Government agencies should be a pioneer in the use of high EE labeled products

Government spending on procurement of high energy efficient products has an important significance and can also help to kick-off the market change. The Vietnamese Government strategy is that government agencies should pioneer energy saving activities to set an example for others. The Energy Efficiency and Conservation Law has reserved one chapter on the regulation of energy efficiency and conservation in government-funded projects, and the agencies and organizations using state budget. The Prime Minister Decision No. 68/2011/QĐ-TTg specifies that from January 2013, when government-funded agencies and organizations need to purchase products that are listed on the regulated list, they must choose energy labeled products (Energy Star label) or a comparative label with five stars.

The Ministry of Finance has been entrusted with the responsibility to issue guidance on this policy implementation. Nevertheless, until now, no detailed guidance document has been introduced. That has made it difficult to implement, especially for organizations in districts, villages and suburban areas. Moreover, while there were numerous training courses by BRESL-Viet Nam to related ES&L implementing groups, there was not any special training for officers responsible for procurement in government agencies and organizations.

MOIT should cooperate closely with the Ministry of Finance to introduce detailed guidance. The Ministry of Finance needs to have a detailed plan to allocate budget for implementing the Energy Efficiency and Conservation Programme in general,

including the ES&L programme, and to provide orientations on these guidelines to government-funded agencies and organizations.

3.5. There is a need to invest in human resources to ensure effective energy labeling activities

Energy labeling activities create a substantial workload, and this can be a challenge for the ES&L management team when hundreds of application documents are submitted to MOIT at the same time. The number of staff in EECO-MOIT and the number of BRESL-Viet Nam supporting officers is still too low to handle the workload requirements. For example, in Circular No.07/2012/TT-BCT regarding energy labeling for energy consuming products and appliances, there is a requirement for an on-site check of manufacturing shops and warehouses of producers and importers that have submitted an application as part of an assessment of enterprises' labeling application. During the voluntary labeling phase, this work could be managed. However, during the mandatory labeling phase with hundreds of applications submitted at the same time, EECO-MOIT has been unable to undertake on-site inspection for all labeling applications, especially when manufacturers and importers' premises are located across the country. The quality of work was also affected.

The same overload problems happened at testing centers. Because of the shortage of testing machines, human resources and workspace areas, the waiting time for businesses has become longer. With a long list of equipment and appliances given to QUATEST 1 and QUATEST 3 to be tested, it is easy to imagine how challenging it is for these organizations to solve and achieve their daily operation requirements. For example, the testing center under VINACOMIN must undertake testing of all refrigerator samples, and it became overloaded from the very beginning.

The application of MEPS is also an important task, and perhaps even more complicated than mandatory energy labeling. MEPS is a key tool to prevent penetration to the market of low quality and low energy efficiency products, which have been manufactured or imported by unqualified domestic businesses. MOST should prepare a detailed plan and inform all stakeholders about MEPS implementation and the correct understanding of MEPS. MOIT should assist MOST by sharing its experience gained from



implementing the ES&L programme. If BRESL is extended to a second phase, BRESL should assist MOST in preparation of such a plan in parallel with training programmes and other promotion activities, and create conditions for experience sharing between engineers and technicians of different testing centers. MOST should also increase the capacity of existing testing centers, as well as consider the possibility of building new ones, which would benefit the ES&L programme in the long term.

3.6. Ensuring sustainability of the ES&L database

The online ES&L database has been developed and transferred to MOIT. Data collecting channels, and reporting and data analyzing mechanisms have started to operate and have contributed a large part of the monitoring and supervising of programme activities and regular evaluation of results. This is an effective tool for management, which would be worth to maintain and further develop. The IT group that is responsible for maintaining the system needs sufficient funding and more technical assistance in order to accelerate completion of the system, as well as to fulfill their responsibility.

Managing the energy registration database system initially created difficulties for MOIT (in particular the database system management unit), due to the large number and variety of registrations. MOIT should have a comprehensive plan in place to solve this matter, and should allocate enough funds and human resources to collect and analyse data and maintain the database system. Special training programmes for data collection, reporting and searching for data online should also be provided to officers, engineers and technicians. There is also a need to develop specialized software to save and analyse data from the ES&L programme, which would be part of general data on energy usage available at <http://energydata.vn> and <http://nhannangluong.vn>.

APPENDICES

Appendix I. Legal documents concerning ES&L

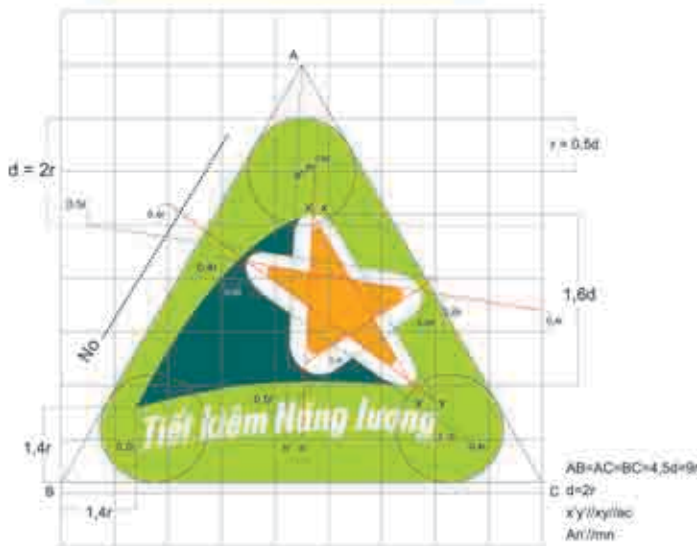
1	<p>Energy Efficiency and Conservation Law No. 50/2010/QH12 <i>Passed by the National Assembly XII on 17/6/2010, announced by the President on 28/6/2010 and acted on from 01/01/2011</i></p>
2	<p>Government Decree No. 21/2011/NĐ-CP <i>- Issued on 29/3/2011 Detailing the Law on Energy Efficiency and Conservation and measures for its implementation</i></p>
3	<p>Government Decree No. 134/2013/NĐ-CP <i>- Issued on 17/10/2013 Administrative penalty in the EE&C area</i></p>
4	<p>Prime Minister Decision No. 79/2006/QĐ-TTg <i>- Issued on 14/4/2006 Approval on National Energy Efficiency Program (2006-2015).</i></p>
5	<p>Prime Minister Decision No. 1427/2012/QĐ-TTg <i>- Issued on 02/10/2012 Approval on National Energy Efficiency Program (2012-2015)</i></p>
6	<p>Prime Minister Decision No. 51/2011/QĐ-TTg <i>- Issued on 12/9/2011 List of equipment and appliances which shall be labeled and roadmap for implementation</i></p>
7	<p>Prime Minister Decision No. 03/2013/QĐ-TTg <i>- Issued on 14/1/2013 Amendment of some Articles of Decision No. 51/2011/QĐ-TTg on 12/9/2011</i></p>
8	<p>Prime Minister Decision No. 68/2011/QĐ-TTg <i>- Issued on 12/12/2011 List of energy saving equipment and means by which they could be purchased by State budget-using entities</i></p>
9	<p>MOIT Circular No. 07/2012/TT-BCT <i>- Issued on 04/4/2012 Regulation on energy labeling for energy using equipment and appliances</i></p>
10	<p>MOIT Circular No. 09/2012/TT-BCT <i>- Issued on 12/4/2012 Regulation on annual reporting of manufacturers and importers of energy consuming equipment</i></p>
11	<p>Prime Minister Decision No. 78/2014/QĐ-TTg <i>- Issued on 25/12/2013 Road map for elimination of low efficient energy consuming equipment</i></p>

Appendix II Designs of the Energy Labels



Color

- C:40, M:0,Y:85, K:0
- C:0, M:40,Y:100, K:0
- C:100, M:55,Y:70, K:8



Prescribed size and scale

The word "Tiết kiệm năng lượng" (energy-saving) is developed from the style of Futura MdCn Bt font.

The symbol of endorsement Label will be used in various kinds of products with different sizes. Therefore, the size of the symbol will be adopted to correlative products.

Guide of using this symbol:

- The minimum size of the symbol is 9*10 (mm)
- The larger sizes of the symbol is used depending on the appropriation between products' printable areas and them.



COMPARING ENERGY LABEL
(Saving at level 1)



COMPARING ENERGY LABEL
(Saving at level 2)



COMPARING ENERGY LABEL
(Saving at level 3)



COMPARING ENERGY LABEL
(Saving at level 4)



COMPARING ENERGY LABEL
(Saving at level 5)

Appendix III: List of appointed testing facilities

1. Quality Assurance and Testing Center 1 (Quatest 1)

Add: No 8, Hoang Quoc Viet, Cau Giay, Ha Noi

Tel: (84-4) 3756 4632

Email: www.quatest1.com.vn

List of energy efficiency products testing

- Fluorescent and compact fluorescent lamps (CFLs)
- Electrical Fluorescent lamp ballasts
- Electromagnetic Fluorescent lamp ballasts
- Straight Tube Fluorescent lamp
- Electric fan
- Rice cooker
- Washing machine
- Distribution transformer
- Electromotor
- Photocopier
- Printer
- Computer Screen
- Television
- Lamp shade

2. Testing office of electrical equipment at Quality Assurance and Testing Center 2 (Quatest 2)

Add: 97 Ly Thai To & 02 Ngo Quyen, Da Nang.

Tel: (84-511) 3826 87

Email: quatest2.com.vn

List of energy efficiency products testing:

- Fluorescent lamps
- Straight Tube Fluorescent lamp
- Electrical Fluorescent lamp ballasts
- Electromagnetic Fluorescent lamp ballasts
- Rice cooker
- Electric fan

3. Quality Assurance and Testing Center 3 (Quatest 3)

Add: No 7 Street 1, Bien Hoa 1 Industrial Zone, Dong Nai

Tel: (84-61) 3836 2

Email: www.quatest3.com.vn

List of energy efficiency products testing

- Fluorescent and compact fluorescent lamps (CFLs)
- Electrical Fluorescent lamp ballasts
- Electromagnetic Fluorescent lamp ballasts
- Straight Tube Fluorescent lamp
- Electric fan
- Rice cooker
- Washing machine
- Distribution transformer
- Photocopier
- Printer

- Computer Screen
- Television
- Refrigerator

4. Ho Chi Minh City Quality Assurance and Testing Center

Add: 263 Dien Bien Phu, District 3, Ho Chi Minh City
Tel: (84-8) 3930 7919

List of energy efficiency products testing

- Electric fan
- Rice cooker

5. Testing Center of Insitute of energy and mining mechanical engineering

Add: 565, Nguyen Trai, Thanh Xuan, Ha Noi
Tel: (84-4) 3552 5553/ (84-4) 3854 3154

List of energy efficiency products testing

- Refrigerator
- Air conditioner
- Photocopier
- Printer
- Computer Screen
- Television
- Rice cooker

6. Testing Center of Intertek Testing Services Ltd., Company (Thailand)

Add: Bangkok, Thailand
• Tel: (66) 2938 1990
• Email: www.intertek.com.th

List of energy efficiency products testing

- Refrigerator
- Washing machine

7. Korea Testing Laboratory (KTL) Hàn Quốc

Add: 222-13, Guro-3 Dong, Guro-Gu, SEOUL 152-718
Tel: (82) 2860 1321
Website: <http://www.ktl.re.kr/eng/>

List of energy efficiency products testing

- Air conditioner
- Washing machine