

**SIGNATURE PAGE**

Country: China, Indonesia, Thailand, Bangladesh, Vietnam, and Pakistan

UNDAF Outcome(s)/Indicator(s):  
(Link to UNDAF outcome - If no UNDAF, leave blank)

Expected Outcome(s)/Indicator (s):  
Common country strategies for addressing global climate change and pollution as stated in their respective CPs and CCFs.

(CP outcomes linked to the SRF/MYFF goal and service line)  
Common country objectives on energy efficiency and sustainable energy development

Expected Output(s)/Indicator(s):  
Project Document prepared and approved/endorsed by the GEF CEO.

(CP outcomes linked to the SRF/MYFF goal and service line)

Implementing partner: National Development and Reform Commission (NDRC), China

Other Partners: Directorate General for Electricity and Energy Utilisation (DGEEU), *Indonesia*  
Department of Alternative Energy Development and Efficiency (DEDE), *Thailand*  
Ministry of Industry, *Vietnam*  
Bangladesh Standards and Testing Institute (BSTI), *Bangladesh*  
Ministry of Environment, *Pakistan*

Programme Period: 2008 – 2013  
 Programme Component: Promoting Energy Efficiency in Residential and Commercial Buildings  
 Project Title: Barrier Removal to the Cost-Effective Development and Implementation of Energy Efficiency (BRESL)  
 Project ID: 00058669 (PIMS 3327)  
 Project Duration: 5 years  
 Management Arrangement: NEX

Total budget:	<u>\$35,880,900</u>
Allocated resources:	
• GEF	<u>\$7,800,000</u>
• Government	<u>\$24,020,900</u>
• Regular	_____
• Other:	
○ Donor	_____
○ Donor	_____
○ Donor	_____
• In kind contributions	<u>\$4,060,000</u>

**Agreed By:**

**Government of People's Republic of China**

Signature \_\_\_\_\_ Date \_\_\_\_\_ Title \_\_\_\_\_

**Government of Indonesia**

Signature \_\_\_\_\_ Date \_\_\_\_\_ Title \_\_\_\_\_

**Government of Thailand**

Signature \_\_\_\_\_ Date \_\_\_\_\_ Title \_\_\_\_\_

**Government of Vietnam**

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Signature \_\_\_\_\_ Date \_\_\_\_\_ Title \_\_\_\_\_

**Government of Bangladesh**

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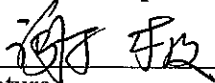
Signature \_\_\_\_\_ Date \_\_\_\_\_ Title \_\_\_\_\_

**Government of Pakistan**

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Signature \_\_\_\_\_ Date \_\_\_\_\_ Title \_\_\_\_\_

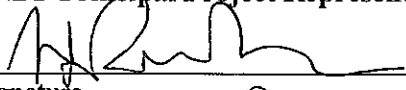
**National Development and Reform Commission, China (NDRC)**



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Signature \_\_\_\_\_ Date \_\_\_\_\_ Title \_\_\_\_\_

**UNDP Principal Project Representative, UNDP China**



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Signature \_\_\_\_\_ Date \_\_\_\_\_ Title \_\_\_\_\_

**UNDP Indonesia**

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Signature \_\_\_\_\_ Date \_\_\_\_\_ Title \_\_\_\_\_

**UNDP Thailand**

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Signature \_\_\_\_\_ Date \_\_\_\_\_ Title \_\_\_\_\_

# Routing Slip for Document Clearance

UNDP China

Type of Document: <sup>a/</sup>	Full Size Project
Full Name of Partner:	National Development and Reform Commission (NDRC)
Project Title: <sup>b/</sup>	Barrier Removal to the cost-effective Development & Implementation
Project ID: <sup>b/</sup>	of Energy Efficiency (BRESL) 00058669

Cleared by:	Signature:	Date:
Team Leader	Sun Xuebing	06 Jan 2009
Finance Unit <sup>c/</sup>	luc	06 Jan 2009
SP&MS Team	luc	6 January 2009
Deputy CD	luc	7/I/09

Comments:
<p>Dear Subinay:</p> <p>Please kindly sign the FSP of BRESL, which is a regional project supported by GEF. Thanks!</p> <p style="text-align: right;">Linda</p>

a/ Documents include memorandum of understanding (MOU), various agreements.

b/ If the document is related to a specific project.

c/ If the document is related to the Finance Unit.

**shijun.liu**

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**From:** Manuel Soriano [manuel.soriano@undp.org]  
**Sent:** 2009年1月6日星期二 11:44  
**To:** shijun.liu  
**Cc:** Karakate Bhamornbutr; 'yu.zhang'; 'Xuebing.Sun'  
**Subject:** RE: BRESL Inception Workshop: Dates Postponed

Hi Linda,

This is very good news indeed. A very good one to start the new year.

If we get the funds by next week, we can definitely plan for 1<sup>st</sup> week of Feb.

Looking forward to receiving the signed signature page. Thanks.

Cheers,  
 Noel

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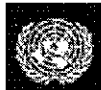


**From:** shijun.liu [mailto:shijun.liu@undp.org]  
**Sent:** Tuesday, January 06, 2009 10:48 AM  
**To:** Manuel Soriano  
**Cc:** Karakate Bhamornbutr; 'yu.zhang'; 'Xuebing.Sun'  
**Subject:** RE: BRESL Inception Workshop: Dates Postponed

Dear Noel:

Kindly be informed that the ProDoc has been signed by MOF. My sincere thanks go to Xuebing for his efforts and push on this. Scanned page with signatures will be sent to you once Subinay signs.

Besides, NDRC suggested the inception workshop be held in the first week of Feb. pls let me know if it is ok.

Best,  
 Linda

  	<b>Liu, Shijun (Ms.)</b> Programme Manager Energy & Environment Team Email: shijun.liu@undp.org Tel: 8610-85320732 Fax: 8610-85320900 Web: www.undp.org.cn Addr: No.2, LiangMaHe NanLu, Beijing 100600
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**From:** Karakate Bhamornbutr [mailto:karakate.bhamornbutr@undp.org]  
**Sent:** 2008年12月24日 12:16  
**To:** Phansiri Winichagoon; Lukas Adhyakso; Budhi Sayoko; Abdul Qadir; Le Van Hung; Shireen Sayeed; xuebing.sun@undp.org; 'shijun.liu'; Sutharin Koonphol

2009-1-6



**Cc:** Manuel Soriano; Ajchima Watanaporn; lukluk\_ratrika@hotmail.com; riris.siahaan@undp.org; Munazza Naqvi; Nguyen Ngoc Ly; yu.zhang  
**Subject:** BRESL Inception Workshop: Dates Postponed

Dear Colleagues


Please be informed that our BRESL Inception Workshop scheduled to be held during 6-9 January 2009 has to be postponed. At the moment, the project document still has not been signed by the Chinese Government. Our colleagues in China CO are trying their best to work on getting the project document signed as soon as possible.

Information on the new dates will be shared with you as soon as it is finalized. We hope that the workshop can take place around the second week of February 2009.

Thank you for your cooperation and understanding.

With best regards

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	<p><b>Karakate Bhamornbutr (Ms.)</b> Programme Assistant - Climate Change UNDP Regional Centre in Bangkok 3rd Floor, UN Service Building Rajdamnern Nok Avenue, Bangkok, Thailand Tel.: +66 (2) 288 2719 Fax: +66 (2) 288 3032 URL: <a href="http://regionalcentrebangkok.undp.or.th">http://regionalcentrebangkok.undp.or.th</a></p>
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**Xuebing.Sun**

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**From:** Xuebing.Sun [Xuebing.Sun@undp.org]  
**Sent:** 2008年12月24日星期三 22:18  
**To:** 'zciyong@mof.gov.cn'; 'whuang@mof.gov.cn'  
**Cc:** 'shijun.liu'  
**Subject:** RE: signing of ProDoc of BRESL  
**Attachments:** BRESL Inception Workshop: Dates Postponed; BRESL brief 20081217.doc

Dear Mr. Zou and Ms. Huang,

Firstly, let me sincerely apologize for my absence from the meeting with you on last Thursday. But I am so pleased to know that you had very constructive meeting with Mr. Guo and preparation of Sanjiangyuan Project already started to move forward quickly.

I am writing to you on signing Prodoc of BRESL project. I understand that the Prodoc of BRESL project has been pending for signature for long period of time. As a result of the pending, the planned inception workshop has been canceled today. For your information, I am attaching an email about the cancellation in this email.

From Donguan Meeting, I learnt that the new policy on account management will be applicable to the new project. Further more, considering the timing for BRESL implementation, I am afraid if it is practical to accommodate this project with the new account management system which you are establishing. In this connection, I am writing to you for seeking your supports to signing of the Prodoc by following the previous practice of Earthquake project and Dicfol. If it needed, we can schedule a meeting to discuss detailed arrangement for the future.

Your understanding and supports to signing the Prodoc will be highly appreciated. Should you have any clarification, please let me know, we will get back to you as quick as possible.


Merry Christmas!

Xuebing

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 Sun Xuebing(Mr.)  
 Ph.D, Team Leader for Energy & Environment  
 United Nations Development Programme  
 Tel: (86 10) 85320736 (Direct)  
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 Address: 2 Liangmahe Nanlu, Chaoyang District,  
 Beijing 100600, P.R. China

2009-1-6

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 Help save paper - do you need to print this email?

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**From:** shijun.liu [mailto:shijun.liu@undp.org]

**Sent:** 2008年12月17日 19:28

**To:** whuang@mof.gov.cn

**Cc:** 'Xuebing.Sun'

**Subject:** signing of ProDoc of BRESL

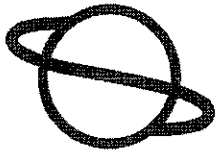
Dear Ms Huang:

It is very nice to talk with you on the phone today. As mentioned, it will be truly appreciated if you could help us on pushing the signing of the proDoc ASAP since all the other 5 countries have signed the ProDoc already and the inception workshop is planned to be held in early Jan.

As for the issue of setting up account in Investment and Evaluation Center of MOF, my team leader Mr. Sun Xuebing will discuss with you tomorrow afternoon. Thanks.

Best,  
Shijun

	<b>Liu, Shijun (Ms.)</b> Programme Manager Energy & Environment Team Email: shijun.liu@undp.org Tel: 8610-85320732 Fax: 8610-85320900 Web: www.undp.org.cn <b>China</b> Addr: No.2, LiangMaHe NanLu, Beijing 100600
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**GEF**

## REQUEST FOR CEO ENDORSEMENT/APPROVAL

PROJECT TYPE: FULL SIZE PROJECT

THE GEF TRUST FUND

**Submission Date:** 1 February 2008

**Re-submission Date:** 14 March 2008

### PART I: PROJECT INFORMATION

**GEFSEC PROJECT ID:** 2777

**GEF AGENCY PROJECT ID:** 3327

**COUNTRY(IES):** Bangladesh, China, Indonesia, Pakistan, Thailand, and Vietnam

**PROJECT TITLE:** Barrier Removal to the Cost-Effective Development and Implementation of Energy Efficiency Standards and Labeling Project (BRESL)

**GEF AGENCY(IES):** United Nations Development Programme (UNDP)

**OTHER EXECUTING PARTNER(S):** - In Lead Country (China) - National Development and Reform Commission/ China Standard Certification Center

**GEF FOCAL AREA(S):** Climate Change

**GEF-4 STRATEGIC PROGRAM(S):** SP-1: Promoting Energy Efficiency in Residential and Commercial Buildings<sup>1</sup>

Expected Calendar	
Milestones	Dates
Work Program (for FSP)	Jun 2007
GEF Agency Approval	<del>Apr 2008</del>
Implementation Start	<del>Jun 2008</del>
Mid-term Review (if planned)	<del>Oct 2010</del>
Implementation Completion	<del>Oct 2013</del>

#### **A. PROJECT FRAMEWORK** (See Details in Part II, Sec A)

Project Objective: Removal of barriers to the cost-effective development and implementation of ES&L programs in Asia (particularly in the participating countries).								
Project Components	Inv/TA/STA**	Expected Outcomes	Expected Outputs	GEF Financing*		Co-financing*		Total (\$)
				(\$)	%	(\$)	%	
1. ES&L Policy-Making Program	TA	Implementation of new laws and regulations enabling and establishing appliance/equipment energy standards and labels (ES&L)	<ul style="list-style-type: none"> <li>• Adopted new laws and regulations on ES&amp;L</li> <li>• Approved new minimum standards for ACs, refrigerators, fluorescent lamp ballasts, electric motors, CFLs, and rice cookers</li> <li>• Approved quality standards for CFLs</li> <li>• Labels in use for at least two products</li> </ul>	1,611,400	21	7,245,700	26	8,857,100
2. ES&L Capacity-Building Program	TA	Enhanced institutional and technical capacity to secure on-the-	<ul style="list-style-type: none"> <li>• New testing standards (at least one) for the targeted products</li> <li>• Signed mutual recognition</li> </ul>	<del>2,607,500</del>	<del>33</del>	9,057,900	32	<del>11,665,400</del>

<sup>1</sup>This project was approved for inclusion in the GEF 2007 Pipeline on the basis of the earlier GEF-4 strategic objective (SO-1) - Promoting widespread adoption of energy-efficient technologies and practices in the appliance and building sectors.

		ground implementation of standards and labels, including establishment of regional working groups for each of the targeted products.	<ul style="list-style-type: none"> <li>agreements</li> <li>• Completed round-robin testing</li> <li>• Posted certification information from participating countries</li> <li>• Implemented national data collection and reporting system</li> <li>• Operational 6 product-specific working groups</li> </ul>					
3. ES&L Manufacturer Support Program	TA	Local product manufacturers developing energy efficient appliances/equipment and realizing profit opportunities from such products	<ul style="list-style-type: none"> <li>• Local manufacturers trained on producing EE equipment</li> <li>• 5 completed and widely accepted technical reports on the 6 BRESL products</li> </ul>	791,400	10	5,273,200	19	6,064,600
4. ES&L Regional Cooperation Program	TA	<ul style="list-style-type: none"> <li>• Regional cooperation in the development and implementation of their ES&amp;L programs</li> <li>• Establishment and implementation of regional harmonization of standards and labels</li> </ul>	<ul style="list-style-type: none"> <li>• Operational ES&amp;L websites in all BRESL countries</li> <li>• Completed Lessons Learned Report</li> <li>• Harmonized standards used by BRESL countries</li> <li>• Completed follow-up action plan</li> </ul>	<del>710,900</del>	9	3,240,700	12	<del>3,951,600</del>
5. ES&L Pilot Projects	TA	<ul style="list-style-type: none"> <li>• Improved markets for EE appliances and equipment in BRESL countries</li> <li>• Improved implementation of regional ES&amp;L harmonization efforts</li> <li>• Replication of ES&amp;L demonstration projects</li> </ul>	<ul style="list-style-type: none"> <li>• Implemented government procurement schemes</li> <li>• Operating on-line EE equipment databases</li> <li>• Successful consumer education programs</li> <li>• Established Regional ES&amp;L Harmonization Facility</li> <li>• Completed regional training workshops in selected ES&amp;L testing facilities on the development and implementation ES&amp;L programs and testing protocols for the 6</li> </ul>	1,298,800	17	2,026,600	7	3,325,400

			BRESL products • Completed pilots of developed harmonized ES&L test procedures and the application of ES&L tools • Designed and implemented consumer financing schemes • Trained consumers on negotiating financing arrangements with EE equipment/appliance suppliers (importers and manufacturers)					
Project Management				780,000	10	1,236,800	4	2,016,800
<b>Total Project Costs</b>				7,800,000	100	28,080,900	100	35,880,900

\*List the \$ by project components. The percentage is the share of GEF and Co-financing respectively to the total amount for the component.

\*\*TA = Technical Assistance; STA = Scientific & technical analysis.

## B. FINANCING PLAN SUMMARY FOR THE PROJECT (\$)

	<i>Project Preparation*</i>	<i>Project</i>	<i>Agency Fee</i>	<i>Total at CEO Endorsement</i>	<i>For the record: Total at PIF</i>
GEF	50,000	7,800,000	706,500	8,556,500	6,800,000
Co-financing	32,000	28,080,900		28,112,900	27,354,900
<b>Total</b>	82,000	35,880,900	706,500	36,669,400	34,154,900

\*Please include the previously approved PDFs and PPG, if any. Indicate the amount already approved as footnote here and if the GEF funding is from GEF-3. Provide the status of implementation and use of fund for the project preparation grant in Annex D.

NOTES: The project preparation grant from GEF was from an approved PDF-A request of US\$ 50,000 under GEF-3. The values quoted at the PIF stage (right hand most column) do not include the project preparation costs.

## C. SOURCES OF CONFIRMED CO-FINANCING, INCLUDING co-financing for project preparation for both the PDFs and PPG

<i>Name of co-financier (source)</i>	<i>Classification</i>	<i>Type</i>	<i>Amount (\$)</i>	<i>%*</i>
Bangladesh Government	Government	Cash & In-Kind	2,000,000	7.1
China Government	Government	Cash	10,068,000	35.9
		In-Kind	932,000	3.3
China - Energy Foundation	Foundation	Cash	600,000	2.1
Indonesia Government	Government	Cash & In-Kind	2,908,900	10.4
Korea Government	Government	In-Kind	78,000	0.3
Pakistan Government	Government	Cash & In-Kind	726,000	2.6
Thailand Government	Government	Cash & In-Kind	4,478,000	15.9
Vietnam Government	Government	Cash & In-Kind	3,085,000	11.0
Int'l Copper Association	Private	In-Kind	2,900,000	10.3
CFL Harmonization Initiative	Regional Organization	Cash	100,000	0.4
		In-kind	100,000	0.4
Australian Greenhouse Office	Government	Cash	50,000	0.2
		In-kind	50,000	0.2
CLASP	Regional Organization	Cash	5,000	0.02
<b>Total Co-financing</b>			<b>28,080,900</b>	<b>100.0</b>

\*Percentage of each co-financier's contribution at CEO endorsement to total co-financing.

**D. GEF RESOURCES REQUESTED BY FOCAL AREA(S), AGENCY(IES) OR COUNTRY(IES)**

GEF Agency	Focal Area	Country Name/ Global	Amount (\$)			
			Project Preparation	Project	Agency Fee	Total
UNDP	Climate Change	Bangladesh	-	1,000,000	90,000	1,090,000
UNDP	Climate Change	China	50,000	2,000,000	184,500	2,234,500
UNDP	Climate Change	Indonesia	-	1,800,000	162,000	1,962,000
UNDP	Climate Change	Pakistan	-	1,000,000	90,000	1,090,000
UNDP	Climate Change	Thailand	-	1,000,000	90,000	1,090,000
UNDP	Climate Change	Vietnam	-	1,000,000	90,000	1,090,000
<b>Total GEF Resources</b>			50,000	7,800,000	706,500	8,556,500

**E. PROJECT MANAGEMENT BUDGET/COST**

Cost Items	Total person-wks	GEF (\$)	Other sources (\$)	Project total (\$)
Local project personnel*	2,334	201,000	435,700	636,700
Local consultants*	1,049	102,500	453,500	556,000
International consultants*	158	320,000	50,000	370,000
Office facilities, equipment, vehicles and communications**		69,000	175,100	244,100
Meetings**		50,000	0	50,000
Travel**		37,500	122,500	160,000
<b>Total</b>	<b>3,541</b>	<b>780,000</b>	<b>1,236,800</b>	<b>2,016,800</b>

\*Provide detailed information regarding the consultants in Annex C.

\*\*Provide detailed information and justification for these line items. See below

Justification: The proposed items to be covered in the GEF budget are the Regional PMO office rental and office equipment (e.g., computers), and office communication and supplies. These are considered necessary given the scope of the proposed regional project, where communication and coordination with country teams are essential for the project success. Considerable amount of travel within the region will be required for the Regional PMO staff for coordination and planning meetings, and for monitoring and evaluation of project implementation.

**F. CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS:**

Component	Total person-wks	GEF (\$)	Other sources (\$)	Project total (\$)
Local consultants*	12,160	1,858,050	4,828,980	6,687,030
International consultants*	5,614	1,981,730	8,039,370	10,021,100
<b>Total</b>	<b>17,774</b>	<b>3,839,780</b>	<b>12,868,350</b>	<b>16,708,130</b>

\*Provide detailed information regarding the consultants in Annex C.

**G. DESCRIBE THE BUDGETED M&E PLAN:**

There are several activities that will be carried out for the project monitoring evaluation. Some of these include: (1) Annual measurement of means of verification for project progress and performance; (2) Annual project reporting, including project implementation review (PIR); (3) Tripartite review meetings; (4) Periodic status reporting; (5) Audits; (6) Mid-term external review; (7) Final external review; and, (8) Visits to field sites. The GEF budget for most of these activities is part of the project management budget cost except for the mid-term review (US\$ 45,000), final external

review (US\$ 30,000), and annual audits (US\$ 25,000 @ US\$ 5,000/year). Part of the M&E costs will be covered by the co-financing share to the project management cost.

## **PART II: PROJECT JUSTIFICATION**

### **A. DESCRIBE THE PROJECT RATIONALE AND THE EXPECTED MEASURABLE GLOBAL ENVIRONMENTAL BENEFITS:**

International experience has shown that ES&L programs have the potential to reduce the unit energy consumption of end-use equipment by as much as 30-50% within a time frame of five to ten years. These savings can be obtained systematic application of a regime that includes product testing, energy labeling, and establishment of minimum energy performance standards for the most significant energy-using equipment in the home. These savings pay for themselves over time, and the efficient equipment has a lower life-cycle cost for consumers. Most Asian countries regard ES&L programs as cost-effective ways to realize their energy efficiency goals, since these provide substantial electricity peak demand reduction and energy savings with attractive cost/benefit ratios. Such programs have proven to be effective for mitigating climate change in all countries in which they have been implemented. These have the potential to effect complete market transformations for different classes of energy-saving products, at a cost far below the cost of providing new energy supply. However, there are several policy/regulatory; institutional; technical; information and awareness; market; and, financial barriers, that have persistently hindered the widespread development and application of ES&L programs in Asian countries.

The goal of the project is the reduction of GHG emissions from thermal power generation in selected Asian countries (i.e., BRESL countries). The objective of the project is the removal of barriers to the cost-effective development and implementation of ES&L programs in Asia (particularly in the BRESL countries). To achieve the project objective, BRESL will comprise of 5 major components, each of which is a specific program consisting of specific activities designed to address the identified barriers.

**Component 1: ES&L Policy-Making Program** – This component focuses on the establishment of legal basis for standards and labels and assisting with the development of regulations for the targeted products. The expected outcome is the implementation of new laws and regulations enabling and establishing appliance/equipment energy standards and labels (ES&L). Pertinent information and technical assistance to the participating countries without ES&L enabling authority in place so they can pass necessary enabling laws or regulations, and adopt new standards and labels for the six targeted products under the project which are room air conditioners, refrigerators, electric motors, lighting products (CFLs and FTL ballasts), electric fan and rice cookers. The following are the major activities under this component: (1) Strengthening of the Policy Context for Energy Standards and Labels (addressing the lack of enabling legislation or regulations to establish ES&L programs in most of the participating countries); and, (2) Adoption and Implementation of Energy Standards and Labeling Regulations (for providing information and assistance to individual countries to help them adopt standards and labels on the six products covered by the project).

**Component 2: ES&L Capacity-Building Program** - This component will address several barriers including lack of technical know-how on ES&L, lack of institutional capacity on ES&L implementation, absence of adequate information on appliance and equipment efficiency and trends and limited local energy performance testing facilities. The expected outcome is enhanced institutional and technical capacity to secure on-the-ground implementation of standards and labels, including establishment of regional working groups for each of the targeted products. This component will include several key activities to build capacity for developing and implementing energy standards and codes including staff training, establishment of product-specific working groups, establishment of regular data collection and reporting processes, and facilitation of mutual recognition agreements. The major activities are: (1) Strengthening and Enabling Public Institutions to Support Development and Implementation of ES&L Programs (training courses emphasizing practical experiences in the region and lessons learned); (2) Capacity Enhancement in the Development and Implementation of Standards and Labeling for the 6 Targeted Products (development of a body of common information and approaches each country can use to set standards and labels, making adoption easier in individual countries and also



bringing a degree of harmonization to standards and labels in the region); (3) Strengthening of National and Regional Testing and Certification Infrastructure – (for addressing the barrier related to the inadequate capacity of testing and certification facilities and programs in the region); and, (4) Strengthening of Data Collection and Reporting Procedures on Equipment Availability and Sales by Efficiency Level in Participating Countries (development of a simple model data collection and reporting procedures).

**Component 3: ES&L Manufacturer Support Program** - This component has been primarily designed to address the barrier that manufacturers are often distrustful of standards and labels, and their objections can delay ES&L efforts or result in weakening of standards. The expected outcome is local product manufacturers developing energy efficient appliances/equipment and realizing profit opportunities from such products. The activities under this component will be carried out separately within each country, but with the sharing of lessons learned at the regular regional BRESL meetings. These include: (1) Preparation of Product Technical Analyses and Reports (preparation of a set of six reports (one per targeted product) on ways to improve product efficiency and the costs involved, including capital and product variable costs); (2) Educational Workshops for Manufacturers and Retailers on Impacts of Standards on Manufacturers and Retailers and Ways to Work with Standards to Increase Profitability (holding training programs for manufacturers and retailers on how standards and labels can affect them and ways to use standards and labels to increase profitability); and, (3) Technical Assistance to Manufacturers (provision of a limited amount of technical assistance to selected local manufacturers of the 6 BRESL products as identified by the participating countries).

**Component 4: ES&L Regional Cooperation Program** - This component is intended to help countries to learn from one another so they can emulate successful efforts and avoid repeating mistakes that others have made. The expected outcome is a regional cooperation framework for assisting individual countries with development and implementation of their ES&L programs and the establishment and implementation of regional harmonization of standards and labels. The major activities under this component are: (1) Development and Operation of a Project Web Site (development a web portal that builds on the existing APEC ESIS web site ([www.apec-esis.org](http://www.apec-esis.org)), which is intended to serve as the repository for ES&L information related to this project and to accommodate information intake and dissemination related to the harmonization work that will be carried out); (2) Lessons Learned Reports (a series of concise “lessons learned” reports will be prepared to address important ES&L issues identified by the BRESL countries); (3) Regional Energy Efficiency Standards and Labeling Network (design and establishment of a Regional Energy Efficiency Standards and Labeling Network); (4) Regional ES&L Harmonization Initiative (specific tasks aimed at laying the groundwork for the facilitation of the planned regional ES&L harmonization starting with test procedures, and later on standards & labels); and, (5) Preparation of a Plan for Regional Activities and Coordination after the GEF-Funded Project Ends (development of a Sustainable Follow up Plan for activities that will be carried out after the BRESL).

**Component 5: ES&L Pilot Projects** - This component is intended to provide flexibility to individual countries, or groupings of countries, to carry out policy research and implement pilot projects at the national level that build on the regional foundation provided by BRESL. It consists of demonstrations by individual countries, or groupings of countries, showcasing various aspects of the design, facilitation and implementation of ES&L programs, including support activities that build on the regional foundation provided by BRESL. It also includes initial work on regional harmonization led by China. The expected outcomes are: (a) Improved markets for EE appliances and equipment in BRESL countries; (b) Improved implementation of regional ES&L harmonization efforts; and, (c) Replication of ES&L demonstration projects. To achieve the component objective and contribute to the realization of the expected outcomes, the following are the major activities that will be conducted: (1) Government Procurement of EE Appliances/Equipment (Bangladesh, Indonesia, Thailand, and Vietnam) - development and implementation of the proposed government procurement schemes, and in the development of mass purchasing agreements; (2) Database (and Web Site) of Energy-Efficient Equipment (Bangladesh and China) - development of an accurate and widely available in-country database (and web site) on energy-efficient products and their usage; (3) Development of Consumer Education Schemes (Bangladesh, Indonesia and Pakistan) - design and implementation of the awareness enhancement schemes; (4) ES&L Initiatives Financing (Indonesia) - design of joint government and private sector financing schemes for ES&L programs and the development of consumer-financing schemes for the purchase of ES&L equipment; and, (5) Regional Harmonization Promotion (China)

- establishment of the regional ES&L harmonization facility, conduct of training workshops, and the piloting of harmonized ES&L test procedures and tools.

The project is projected to reduce GHG emissions from the BRESL countries by 24.8 MMT CO<sub>2</sub>/yr by project end. Savings will steadily mount after the project ends as existing equipment is replaced by more efficient equipment, reducing GHG emissions by about 188.1 MMT/yr ten years after project end, and by about 273.5 MMT/yr twenty years after project end. In addition, the project will demonstrate successful ES&L programs in the BRESL countries, which represent a wide range of situations and experiences. The demonstration of the various aspects of the development and implementation of ES&L programs, and the lessons learned will be helpful for starting or improving ES&L programs in other regions.

**B. DESCRIBE THE CONSISTENCY OF THE PROJECT WITH NATIONAL PRIORITIES/PLANS:**

The proposed regional project is mainly based on, and therefore is in line with, energy conservation and energy efficiency objectives of the BRESL countries. In the case of Bangladesh, the proposed national activities in this country under BRESL are basically in line with the objectives of the country's National Energy Plan (1996), which gives special importance to energy efficiency and calls for awareness campaigns, the gradual implementation of ES&L programs, and energy auditing and training. The national activities under BRESL is expected to significantly enhance the country's progress on labeling and MEPS. BRESL is also in accord with the objectives of China's Energy Conservation Law (1997), which aims to achieve the rational and efficient use of energy through enhanced energy use management, the adoption of measures, and the reduction of loss and waste in the energy production and consumption chain. It is also in support of the ongoing work on the development, implementation and supervision of MEPS; endorsement labeling program (started in 1998); and comparative labeling program (2003), which is now mandatory for several products. BRESL is also in line with Indonesia's Energy Conservation Master Plan (1995) and the country's ongoing program to set up national standards for room air conditioners, electric water heaters, televisions and electric irons. Pakistan's National Conservation Strategy (1992), which includes energy standards & labeling of household equipment/appliances, is the main basis of the national activities of BRESL in that country. Moreover, BRESL is also in line with the Pakistan Standards and Quality Control Authority Act (1996), which provides some directions for standardization and labeling of products, processes or services. The national activities of Thailand under BRESL will build on and is in line with the country's voluntary energy labeling for refrigerators, air conditioners, brown rice, rice cookers, residential fans, compact fluorescent lamps, and fluorescent lamp ballasts. Lastly, the national activities for Vietnam under BRESL are in accord with the set objectives of the Governmental Decree on Energy Conservation and Energy Efficiency (2003), which among others, require suppliers of energy-consuming equipment and facilities to declare the energy consumption of the equipment in the user country's Electricity Saving Program (2006 – 2010) that requires suppliers to put a label on high-efficiency electric appliances: electric motors, fans, air conditioners, fluorescent-tube lamps (FTLs); and FTL ballasts.

**C. DESCRIBE THE CONSISTENCY OF THE PROJECT WITH GEF STRATEGIES AND STRATEGIC PROGRAMS:**

The proposed project is in line with the GEF Climate Change Strategic Program (SP-): Promoting Energy Efficiency in Residential and Commercial Buildings<sup>2</sup>, which targets an increased market penetration of energy efficient technologies, practices, products and appliances in the residential and commercial building markets.

**D. OUTLINE THE COORDINATION WITH OTHER RELATED INITIATIVES:**

The proposed project is designed to build on the present capacity for ES&L programs in some of the Asian countries, as well as on the outputs and lessons learned from the implementation of previous and ongoing ES&L initiatives in the region, which are mostly sub-regional collaborations addressing ES&L. These included: (1) APEC Expert Group on Energy Efficiency & Conservation, under the APEC Energy Working Group; (2) South Asia Regional Initiative (SARI) –

<sup>2</sup> This project was approved for inclusion in the GEF 2007 Pipeline on the basis of the earlier GEF-4 strategic objective (SO-1) - *Promoting widespread adoption of energy-efficient technologies and practices in the appliance and building sectors.*

Energy; (3) ASEAN Regional Standards and Labeling Harmonization Program; and, (4) CFL Harmonization Schemes such as: (a) Efficient Lighting Initiative (ELI); (b) CFL Harmonization Initiative. The BRESL project design calls for cooperation, coordination and sharing of information by the BRESL countries with the abovementioned ES&L programs. Such cooperation is envisioned as something that will yield the benefits of greater market transparency, reduced costs for monitoring and evaluation (M&E) and product testing, enhanced prospects for trade and technology transfer, reduced costs for developing government and utility energy efficiency programs, and open trading of energy efficient appliances/equipment. The BRESL project will also collaborate with IEA countries in the Asia-Pacific region (Australia, Canada, Japan, Korea, New Zealand and the U.S), which are important current and future trading partners. Moreover, BRESL will also collaborate with several other GEF-funded projects that include ES&L components as major activities in achieving GHG emission mitigation goals.

The BRESL project will work with national teams and government counterparts associated with the above regional efforts, as well as with other GEF projects in the region to collaborate in the design and implementation of national ES&L programs. These include projects in China such as the Barrier Removal for the Efficient Lighting Products and Systems (UNDP); Barrier Removal for the Widespread Commercialization of Energy-Efficient CFC-Free Refrigerators (UNDP); End-Use Energy Efficiency Project (EUEEP); Efficient Lighting Market Transformation Project in the Philippines (UNDP); DSM project in Thailand (WB); Vietnam Energy Efficiency Public Lighting (UNDP); Vietnam Phase 2 DSM (WB); as well as the Efficient Lighting Initiative (ELI) in the Philippines. Where possible, the key members of some of these projects will also be involved in the implementation of the project development exercise. Some of these people may also be involved as members of the regional PSC for BRESL. The establishment of links with these ongoing projects has helped in identifying the BRESL activities. The project development team has worked closely with the identified implementing partners in the BRESL countries, as well as with the UNDP-GEF Regional Coordination Unit for Asia-Pacific in Bangkok (UNDP-GEF A&P RCU). The UNDP country office in the designated lead country (China) was fully involved in the project development through its participation in the various stakeholder and co-financing consultation meetings and technical workshops during the project development phase, and in the multipartite review meetings. Consultations will also be done with UNDP-GEF, New York during the project development phase.

**E. DESCRIBE THE INCREMENTAL REASONING OF THE PROJECT:**

Without the GEF support, the potential significant global environmental benefit in terms of CO<sub>2</sub> emissions reduction from the utilization of energy efficient appliances/equipment in residential and commercial buildings will not be realized. If the current barriers that hinder appliance/equipment manufacturers in the Asian region in producing EE electrical products and also those that hinder countries in developing and implementing national ES&L programs and in the trading of EE appliances/equipment will persist, the potential CO<sub>2</sub> emission avoidance would not be realized. The countries in the region (particularly the BRESL countries) would have limited success in promoting energy efficiency as an effective policy and institutional instrument for achieving their respective EC&EE objectives. The ongoing and/or planned work on improving the energy utilization efficiency in the residential and commercial sectors of these countries, in general, and in the promotion of the utilization of EE appliances/equipment are limited to mainly to the respective countries. The potential of spreading the benefits cost effectively to other countries in the region through regional trade will not be realized. By expanding the scope of the current and/or planned ES&L work to cover regional harmonization on ES&L as well as regional cooperation and information sharing on ES&L applications under the proposed BRESL project, the magnitude of national development benefits (energy savings) and global environmental benefits (CO<sub>2</sub> emission reduction) will become more significant especially for a highly developing region like Asia. Moreover, by following up on the accomplishments achieved in the previous and ongoing in-country and regional ES&L initiatives, incremental funds from the GEF would be useful in expanding the energy saving and CO<sub>2</sub> emission reduction opportunities through more intensive capacity development, policy and regulatory frameworks, demonstrations and technical support. The forecast economic growth of many of the Asian countries and the associated growth in electricity consumption from the use of electrical appliances/equipment in households and commercial establishments present an opportunity to transform the appliance/equipment market in the BRESL countries and in the region towards EE products. With the GEF support for the incremental cost needed to create the much needed policy and regulatory regimes that will support national ES&L program development and implementation, capacity building to improve local skills in the design and production of EE

appliances/equipment, as well as in improving the market share of EE products, the anticipated energy savings in the thermal power generation sector, which produce the electricity used in appliances/equipment can be achieved. In that regard, the GEF support will ultimately help achieve significant GHG emission reduction in the Asian region.

**F. INDICATE RISKS, INCLUDING CLIMATE CHANGE RISKS, THAT MIGHT PREVENT THE PROJECT OBJECTIVE(S) FROM BEING ACHIEVED AND OUTLINE RISK MANAGEMENT MEASURES:**

From the preliminary discussions with the possible stakeholders, it is expected that the overall project risk will be moderate. The potential risks, which could hinder the successful project implementation and/or reduce project effectiveness, relate to: (a) the sustainability of the support by key stakeholders in the participating countries; (b) lack of, or fading, interest of the private sector (particularly appliance/equipment manufacturers and suppliers); (c) financing of investments for manufacturers to modify their production facilities may not be available. (d) ineffective project coordination at the national and/or regional levels; (e) failure of EE products to perform as claimed by manufacturers resulting in customer dissatisfaction; (f) unabated proliferation of illegally traded and unreliable EE equipment/appliances; and, (g) unwillingness of consumers to buy EE products due to bad experiences in the past and high initial cost may lead to failure of the project to induce increased sales and widespread use of EE equipment and appliances. To address these anticipated risks, the project will be designed to include an effective means to monitor and to the extent possible mitigate these risks. Mitigation measures may include a strong emphasis on hands-on project management and participation of each country, mobilizing private sector participation and a continuous dialogue between the project's donors, implementing partner, executing agency, regional organizations and national governments.

**G. EXPLAIN HOW COST-EFFECTIVENESS IS REFLECTED IN THE PROJECT DESIGN:**

The anticipated energy savings from the use of energy efficient appliances/equipment that will be facilitated and influenced by the interventions that will be carried out under the proposed regional project will bring about CO<sub>2</sub> emission reductions from the reduced utilization of fossil fuels used in thermal power generation units that produce the electricity utilized in these energy using products. The implementation of ES&L initiatives catalyzed by the BRESL project will lead to about 24.8 million tons of CO<sub>2</sub> by end of project, and a cumulative CO<sub>2</sub> reduction of 37.3 million tons. The long-term direct CO<sub>2</sub> emissions reductions will be much greater, and cumulative reductions will reach about 1,195 million and 3,867 million tons of CO<sub>2</sub> in 2021 and 2031, respectively. Considering the cumulative amount of CO<sub>2</sub> emissions avoided attributed to the proposed 5-year project, this translates to an approximate unit abatement cost (UAC) of US\$ 0.314/ton CO<sub>2</sub> (i.e., GEF\$ per ton CO<sub>2</sub>). This measure of the project's cost effectiveness (i.e., UAC) will be tracked using a monitoring and evaluation system that the proposed project will develop. This preliminary UAC figure will be re-evaluated and updated during the project design particularly in quantifying the potential energy savings from the confirmed demonstration projects and projected replications and in coming up with the CO<sub>2</sub> emission reduction estimates. The updated CO<sub>2</sub> emission figures and UAC will be indicated in the project document that will be submitted later for CEO endorsement.

**PART III: INSTITUTIONAL COORDINATION AND SUPPORT**

**A. PROJECT IMPLEMENTATION ARRANGEMENT:**

The implementation arrangements for the BRESL project will be at 2 levels. The first level will mainly be for the facilitation of regional cooperation. A Regional Project Steering Committee (RPSC) will be established and will comprise of the representatives of the UNDP-GEF A&P RCU, UNDP-China, BRESL country focal points, National Development and Reform Commission (NDRC), and also including CSC and the Director of the Regional Project Management Unit (RPMU). The RPSC will play the role of an advisory committee. The Chairperson of the RPSC will be elected on a rotating basis among the participating countries. The RPMU will be responsible for coordinating and implementing the regional and national activities of the project. The RPMU Director will serve as the Secretary of the RPSC. The NDRC is the project's Implementing Partner (or Executing Agency) for the BRESL project while the China Standard Certification Center (CSC) is the Designated Implementing Partner (or Designated Implementing Agency).

UNDP-China, together with the UNDP-GEF Regional Technical Advisor for Climate Change in the Asia-Pacific region will carry out the GEF oversight. Working in conjunction with the various project partners, UNDP-China will be responsible for monitoring and evaluation (M&E), including organizing project reviews, approving annual implementation work plans and budget revisions, monitoring progress, identifying problems, suggesting actions to improve project performance, facilitating timely delivery of project inputs, and provide linkages to the other sub-regional, Asia-Pacific regional and global initiatives. All M&E functions will be carried out in line with standard UNDP and UNDP-GEF procedures. UNDP China will also provide country office support for all the activities of the project as agreed with the implementation partner of China.

As the Implementing Partner for this regional project, NDRC will appoint a Regional Project Director (RPD) to be in charge of overall responsibilities, including planning, coordination, administration and financial management of the project with support by UNDP-China. As the Designated Implementing Partner for this regional project, the CSC will take responsibility of supporting NDRC and UNDP-China in managing and implementing the BRESL project. The RPMU will be responsible for the day-to-day management of all the project activities including those on capacity building, demonstration sub-projects and dissemination activities both at the regional and national level. At the same time, the RPMU will undertake some regional activities directly if needed. Relevant regional activities will be subcontracted to, and executed by appropriate regional organizations with the expertise and time on mutually agreed terms. Regional organizations, which have the comparative advantage vis-à-vis the relevant regional activities, will be designated as the sub-contractor for those activities.

The second level will mainly be on the implementation of the Country Teams (CTs) in each BRESL country. The CTs, made up of representative from government, the private sector and civil society including NGOs will ensure that the national activities are carried out in coordination with all the parallel activities. Each CT will provide support as per agreed work plan to the BRESL implementation at the regional level to ensure the maximum outputs and achievement of the project. Each CT will appoint their own national experts, as needed, in accordance with the agreed national activities to be carried out under the BRESL project. Each country will appoint a National Project Coordinator (NPC) who will work full time on the project and paid from its country budget. The NPC will also be responsible for the day-to-day management and implementation of all national project activities. National government professionals and other relevant national stakeholders from the private sector and civil society will, to the extent possible, manage, coordinate and implement the in-country activities. The CTs will upon the request of the RPMU and as per agreed work plans be provided with external technical assistance for implementation of specific in-country activities. Relevant regional organizations, national consultants, regional consultants or international consultants can provide such needed expertise to the RPMU as needed.

#### **PART IV: EXPLAIN THE ALIGNMENT OF PROJECT DESIGN WITH THE ORIGINAL PIF:**

The project design includes some evolution in project thinking since the Project Concept was approved in 31 May 2005. Major changes include a reduced number of countries (several countries dropped out due to other priorities for using their GEF allocation) and the expansion of the number of targets targeted from 5 to 6 ½ (the half is work on rice cookers in three of the countries). Most of the activities in the Concept Paper are retained, but have been rearranged to make implementation easier. A few components were dropped because they were either not needed or were too expensive relative to the value they provide. The following summarizes how the Project Concept has evolved into this Project Document:

- Component 1: ES&L Policy Making Enhancement Program - Focus on capacity building on the policy and regulatory aspects of ES&L within national boundaries – (a) Activity 1.1: Strengthening of policy context for EE technologies; (b) Activity 1.2: Adoption and implementation of ES&L regulations; and, (c) Activity 2.1: Public institutions (and utility demand-side management (DSM) offices in some cases) strengthened
- Component 2: ES&L Awareness Enhancement and Promotion Program - Address regional network building and information sharing through database and network Allow both policymakers and manufactures to learn from other

countries – (a) Activity 3.1: Web site with regional information developed and maintained; (b) Activity 3.2: Lessons learned are assessed, documented and disseminated; (c) Activity 4.1: Project web site with regional information developed and maintained; provides umbrella for websites referenced in other components; and, (d) Activity 4.2: Lessons learned are assessed, documented and disseminated.

- Component 3: EE Equipment/Appliance Market Development Program - Building market for EE equipment and appliances; Study equipment and appliance markets; and, Establish financing schemes – (a) Activity 2.2: Capabilities to develop and implement standards and labeling for the 5 targeted products improved in each of the BRESL countries
- Component 4: ES&L Technical Support Program - Provide technical capacity building on ES&L for each country. Development or improve local manufacturing capacity for energy efficiency equipment; testing, accreditation, and compliances procedures both regionally and locally. – (a) Activity 2.2: Capabilities to develop and implement standards and labeling for the 5 targeted products improved in each of the core-countries; (b) Activity 2.3: National and regional testing and certification infrastructure significantly strengthened; (c) Component 3: Regional cooperation and information sharing on-going and helps to maximize impacts
- Component 5: ES&L Demonstration Program - Implementation of several pilot ES&L programs to demonstrate various aspects of the development & implementation of ES&L programs and in the regional harmonization of ES test procedures and certification, and application of monitoring and evaluation tools. – Component 5: Conduct of pilot activities showcasing various aspects of the design, facilitation and implementation of ES&L programs
- Component 6: Sustainable National & Regional ES&L Program - Ensuring the sustainability of the interventions that will be carried out under the BRESL project that will address the barriers to the widespread development and implementation of ES&L programs in the Asian region – (a) Activity 4.4: Preparation of a Plan for Regional Activities and Coordination after the GEF-Funded Project Ends

The project was re-pipelined in October 2006 with the submission of a Supplementary Annex. It was approved for inclusion in the GEF CY 2007 work pipeline on November 2006 on the basis of the earlier GEF-4 strategic objective (CC-1) on energy efficient buildings and appliances, which targets an increased market penetration of energy efficient technologies, practices, products and appliances in the residential and commercial building markets. The project design has also been reviewed twice by the GEFSec in January and April 2007. The current Project Document is an updated version of the GEF June 2007 Council-approved BRESL Project Document, incorporating the changes/modifications and additions done based on the responses to the comments and suggestions in the 3 GEFSec reviews, and the inclusion of Pakistan among the BRESL countries thereby increasing the overall GEF project cost to US\$ 7.8 million.

**PART V: AGENCY(IES) CERTIFICATION**

This request has been prepared in accordance with GEF policies and procedures and meets the GEF criteria for CEO Endorsement.	
<i>Yannick Glemarec</i> UNDP-GEF CEO	Manuel L. Soriano Regional Technical Advisor – Energy & Climate Change
Date: <i>(Month, Day, Year)</i>	Tel. and Email: +66-2-2882720; <a href="mailto:manuel.soriano@undp.org">manuel.soriano@undp.org</a>

**ANNEX A: PROJECT RESULTS FRAMEWORK**

Project Strategy		Objectively Verifiable Indicators			Target	Means of Gauging Success	Critical Assumptions
		Indicator	Baseline				
<p><b>GOAL:</b> Reduction of GHG emissions from thermal power generation in BRESL countries.</p> <p><b>OBJECTIVE:</b> Removal of barriers to the successful implementation of energy standards and labeling policies and programs in Asia.</p>	<ul style="list-style-type: none"> <li>Reduction in GHG emissions from thermal power generation (based on electricity consumption of installed products from 2007-2011)</li> <li>Reduction in total electricity use in the residential, commercial and industrial sectors (based on electricity consumption of installed products from 2007-2011).</li> <li>Market share of energy efficient appliances and equipment</li> </ul>	<ul style="list-style-type: none"> <li>CO2 emissions generation in Year 0 = 435.5 MMT/yr</li> <li>CO2 emission generation in Year 5 = 904.7 MMT/yr</li> <li>Electricity usage in Year 0 = 515,829 GWh/year</li> <li>Electricity usage in Year 5 = 1,071,491 GWh/yr</li> <li>Increase in efficiency of products is at rate of 0.2 to 1% per year</li> </ul>	<ul style="list-style-type: none"> <li>CO2 emission generation in Year 5 = 880.0 MMT/yr</li> <li>CO2 emission reduction = 24.8 MMT/yr by Year 5</li> <li>Electricity usage in Year 5 = 1,043,691 GWh/yr</li> <li>Electricity savings in Year 5 = 27,799 GWh/yr</li> <li>Market share of efficient products increase 25% in Year 5</li> </ul>	<ul style="list-style-type: none"> <li>Monitoring reports from participating governments to the PMU</li> <li>Official publications on sales and saturation rates of EE equipment</li> <li>Annual reporting on progress from the participating countries</li> </ul>	<ul style="list-style-type: none"> <li>Continuous and committed support and participation from governments</li> <li>Proactive participations of equipment suppliers, engineering firms, and financial institutions</li> </ul>		
	<p><b>OUTCOMES</b></p> <p><b>Outcome 1: ES&amp;L Policy-Making Program - Establishment of legal and regulatory basis for removing lowest EE technologies from the market and promoting high-efficiency technologies.</b></p>	<ul style="list-style-type: none"> <li>Clear ES&amp;L principles expressed in laws and regulations of participating countries by Year 3.</li> <li>New minimum standards for air conditioners (A/Cs), refrigerators, fluorescent ballasts, motors, CFLs</li> </ul>	<ul style="list-style-type: none"> <li>Except for China and Korea, countries lack clear regulatory and legal framework for MEPS and mandatory labeling</li> </ul>	<ul style="list-style-type: none"> <li>4 countries adopt new laws and regulations on ES&amp;L by Year 3</li> <li>10% energy savings in new AC by Year 5; 10% energy savings in new refrigerators by Year 5; 30% reduction in losses from new ballasts by Year 5; 4% energy savings for new motors by Year 5; 15% reduction in electricity use from new electric fans by Year 5; 20% reduction in electricity use from rice cookers by Year 5</li> </ul>	<ul style="list-style-type: none"> <li>Official publications or documents on energy-efficiency regulations and policies provided by each selected country.</li> <li>National statistics on standards and labeling programs as reported on APEC Energy Standards Information System (<a href="http://www.apec-esis.org">www.apec-esis.org</a>)</li> <li>Annual reports to the PMU by each participating country</li> <li>Project visits and surveys.</li> </ul>	<ul style="list-style-type: none"> <li>Continued political support by governments in participating countries to advance legislation.</li> </ul>	
<p><b>Outcome 2: ES&amp;L Capacity-Building Program - Building of institutional and individual capacity to secure on-the-ground implementation of regulatory frameworks, as well as actual standards and labeling programs.</b></p>	<ul style="list-style-type: none"> <li>New testing standards and testing facilities in place and operational by Year 4.</li> <li>MRAs in place and enforced for product testing and posting of certification information by Year 4</li> <li>Countries with annual data collection and reporting systems in place and being implemented</li> </ul>	<ul style="list-style-type: none"> <li>At least one for the targeted products in at least 3 countries</li> <li>3 MRAs signed by Year 4.</li> <li>Certification information posted on at least 500 products by Year 5</li> <li>At least 4 countries have such data gathering system by Year 3</li> </ul>	<ul style="list-style-type: none"> <li>PMU annual progress reports</li> <li>Mutual Recognition Agreements (MRAs) between appropriate agencies in each country</li> </ul>	<ul style="list-style-type: none"> <li>Interest remains at least at current levels throughout the project</li> <li>Organizations involved with testing have some flexibility to accommodate needs of other countries</li> </ul>			

Project Strategy	Objectively Verifiable Indicators			Means of Gauging Success	Critical Assumptions
	Indicator	Baseline	Target		
<b>Outcome 3: ES&amp;L Manufacturer Support Program - Provision of information and technical assistance to manufacturers of covered products</b>	<ul style="list-style-type: none"> <li>Total number of local manufacturers manufacturing EE equipment/appliance</li> <li>Number of high efficiency models produced</li> <li>Volume of EE products sold</li> </ul>	<ul style="list-style-type: none"> <li>Market shares of EE products are low (typically less than 5-10%)</li> <li>Local manufacturers or suppliers do not produce EE products</li> </ul>	<ul style="list-style-type: none"> <li>Sales of EE products increase at least 25% by Year 5</li> <li>At least 5 local manufacturers begin producing EE equipment</li> </ul>	<ul style="list-style-type: none"> <li>Survey of manufacturers receiving reports and technical assistance</li> <li>Annual reports to PMU of each participating country</li> </ul>	<ul style="list-style-type: none"> <li>Manufacturers will use information they are provided.</li> </ul>
<b>Outcome 4: ES&amp;L Regional Cooperation Program - Regional cooperation and information sharing on-going and helps to maximize impacts</b>	<ul style="list-style-type: none"> <li>Number of national web sites operating and updated annually</li> <li>Lessons learned reports</li> <li>Work group activities contributing to regional ES&amp;L harmonization</li> <li>Regional Follow-up Action Plan</li> </ul>	<ul style="list-style-type: none"> <li>APEC ESIS web site operating and displays current ES&amp;L programs</li> <li>CLASP Manual</li> <li>No regional work group on ES&amp;L</li> </ul>	<ul style="list-style-type: none"> <li>All BRESL countries have ES&amp;L websites operating by Year 2 and updated at least annually</li> <li>Report completed &amp; posted by Yr 2 on at least 4 issues</li> <li>At least countries use harmonized standards</li> <li>Follow-up action plan (Yr-4)</li> </ul>	<ul style="list-style-type: none"> <li>Web sites</li> <li>PMU reports</li> <li>Lessons Learned reports</li> <li>Work group minutes</li> <li>Documentation of MRAs</li> <li>Documentation of Follow-up plan</li> </ul>	<ul style="list-style-type: none"> <li>Interest in regional coordination continues</li> <li>Governments provide support to work group activities</li> </ul>
<b>Outcome 5: ES&amp;L Pilot Projects - Demonstration of various aspects of the development and implementation of ES&amp;L programs</b>	<ul style="list-style-type: none"> <li>Number of countries implementing government procurement schemes for EE products</li> <li>Number of countries with EE products databases</li> <li>Number of countries with EE consumer education schemes</li> </ul>	<ul style="list-style-type: none"> <li>China and Korea implementing government procurement policies</li> <li>On-line databases of efficient equipment only available in Korea</li> <li>Limited consumer education and promotion schemes</li> </ul>	<ul style="list-style-type: none"> <li>2 countries by Year 3</li> <li>2 additional countries by Year 3</li> <li>Successful and acceptable results in at least 3 countries by Year 3, at least two more countries replicate successful schemes</li> </ul>	<ul style="list-style-type: none"> <li>Official documents on government procurement policies</li> <li>Websites</li> <li>Annual PMU Reports</li> <li>Report on pilot schemes</li> </ul>	<ul style="list-style-type: none"> <li>Governments will adopt and implement successful schemes</li> <li>Other countries can find the funds to replicate successful schemes</li> <li>Consumers interested in web-based information</li> </ul>



**ANNEX B: RESPONSES TO PROJECT REVIEWS** (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF)

**STAP Expert Review and IA/ExA Response**

**UNDP/GEF Project Document**  
**Asia: Barrier Removal to the Cost-Effective Development and Implementation of Energy Efficiency Standards and Labeling Project (BRESL)**

**STAP Review by Gautam S. Dutt**  
**17 Sep. 2006**

Overall comments

Energy efficiency (EE) improvement faces many barriers and promoting activities to reduce these barriers provides economic benefits to energy consumers while reducing CO2 emissions.

This STAP reviewer strongly supports the proposed project.

Additional comments are provided below. Many specific and detailed comments and corrections are marked in the Executive Summary and Project Document that are attached to this STAP Review. File names: Asia BRESL ExecSum 130906 com GD.doc; and Asia BRESL ProDoc 120906-A com GD.doc. These suggestions are intended to facilitate the revision of the project Document.

**KEY ISSUES**

**Scientific and technical soundness of the project**

End-use energy efficiency improvement provides an excellent opportunity for reducing GHG emissions. Many barriers impede the full penetration of EE technologies. By aiming to reduce these barriers for electricity efficiency in residential, industrial and commercial sectors through effective standards and labeling (S&L) programs, the proposed project is scientifically and technically sound.

Note, however, that some of the BRESL countries already have S&L programs. It is not clear if these programs are successful, and at least one of the countries does not have an effective compliance regime. Thus, the proposed project should explicitly include an evaluation of previous efforts as well as the development of an effective compliance regime. This reviewer believes that such an activity could be added to, or included within, the five program components (see, e.g. p. 17 of Exec. Summary). The evaluation should include actual equipment performance (see following paragraph).

Note that “Means of Gauging Success” column of the Table in Annex B (Project Planning Matrix) of the Exec. Summary appears not to include any evaluation based on actual performance of the affected equipment. Nor is this included in Part V of the Project Document (Tables 23 and 24). The determination of the actual performance of equipment covered by standards or labeling should be an explicit part of the project, for the outcome to be meaningfully quantifiable.

One of the five components refers to manufacturer support, described as “provision of information and technical assistance,” (p. 17 of Exec. Summary). In order to produce more efficient equipment, manufacturers are likely to require investment capital. If the proposed GEF project does not consider that

such capital requirements and makes no provisions for it, manufacturers may end up being well informed but unable to manufacture more efficient equipment. This is likely to be especially severe in the poorer BRESL countries such as Bangladesh. The Project Document notes this need, and correctly makes special provisions to encourage financial institutions in Bangladesh to be involved in providing such funds. Moreover, this item should be included among the potential project risks. This reviewer has suggested a line to this effect in Table 22 of the Project Document.

Another weak link appears to be the equipment sellers, especially for household equipment. One recalls one very large appliance retailer in New Jersey not stocking energy efficient models of refrigerators in the early 1980s (after the mandatory labeling program in the US, but prior to mandatory MEPS), on the grounds that the other (less efficient) model provided the same service. Two decades later in Argentina, with neither labels nor MEPS, sellers were equally uninformed on the energy consumption of household appliances. Some countries, e.g. Thailand, have achieved great success insofar as purchasers understand the energy labels. The training of equipment sellers for household equipment is therefore important and a separate component might be included in the project. The role of equipment sellers is particularly important for the success of labeling programs, where energy efficiency improvement depends on the purchasers' informed decisions.

If it is difficult, at this stage, to add more project components, this STAP reviewer strongly recommends that the items mentioned above be included within one or more of the existing five components.

Since the key barriers facing EE are common to many countries, as are the types of programs needed to reduce such barriers, including S&L, a single GEF project covering several Asian countries makes sense.

#### Identification of global environmental benefits

The principal global environmental benefits of this project are in terms of reduced emissions of CO<sub>2</sub> (a greenhouse gas) to the extent that energy efficiency reduces the need for electricity generation, and specifically reduces the need for burning fossil fuels for producing electricity.

It is not possible for this STAP reviewer to check all the emissions reductions estimates. The key assumptions (CO<sub>2</sub> emissions factors for power generation in the target countries, and the potential for energy efficiency improvement in the target equipment) appear to be reasonable. Note, however, that two slightly different values of expected emissions reductions over five years are quoted in Part III of the Project Document (highlighted in the text).

The potential global environmental benefits are large, especially considering indirect benefits: China and Korea provide a large fraction of appliances to other countries, and any improvement in these countries is likely to improve energy efficiency elsewhere as well.

How does the project fit within the context of the goals of the GEF?

The project fits very well within the context of GEF goals, specifically through its Operational Programme 5, incorporating strategic priorities CC-1 and CC-2.

#### Regional context.

The project is regional in scope, involving seven large Asian countries. This allows for experience sharing through project development as well as the creation of common, regional policies to promote EE. Moreover, the project is integrated into APEC activities, including the use of an APEC website, allowing

the project to be followed by other countries in the region. The fact that the seven countries use at least seven different official languages (and other languages are not used) could be a serious communication problem.

#### Replicability of the project.

The project is intended to improve EE in residential industrial and commercial equipment through standards and labeling programs. S&L of programs have already been successfully implemented in many industrialized countries, some developing countries (such as Mexico), and even in two of the countries object of the current project (South Korea and China). However, S&L programs are a continuing process, as standards are made progressively stricter, and both standards and labels cover an increasing number of energy consuming equipment. Thus the proposed project is already the replication of successful projects elsewhere. (There should be a greater emphasis on learning from this experience.) Moreover, the experience gained in the proposed project would be useful for future S&L programs in these countries as well as in other countries.

#### Sustainability of the project.

The project design appears to support sustainability. Standards and labeling programs, once established, are easy to maintain. Moreover, the proposed project includes components to promote future strengthening of the applicable standards. This would provide continuity and additional energy savings after the project financing ends.

### SECONDARY ISSUES

#### Linkages to other focal areas.

The promotion of energy efficiency does not have a significant impact on other GEF focal areas.

#### Linkages to other programmes and action plans at the regional and sub regional levels.

The project itself is regional. Moreover, it was based on regional workshops covering other countries and groups in Eastern and South Asia. Furthermore, the results will be made available through APEC, including the use of the APEC website. This would thus permit additional visibility to the project; and facilitate replication beyond the immediate group of countries directly included in the project.

#### Other beneficial or damaging environmental effects.

To the extent that energy efficiency improvements will offset fossil fuels, there will be reduced air pollution emissions that would occur through the combustion of those fuels in generating electricity. Thus there are significant co-benefits to this type of project aimed at reducing GHG emissions.

#### Degree of involvement of stakeholders in the project.

The project design, including the PDF-A component, appears to have involved the appropriate stakeholders, so that these are likely to be actively involved in project implementation. This can be seen also from the very substantial co-financing of the project not only from in-country stakeholders, but also from the International Copper Association. (Energy efficient motors require greater use of copper.) Note, further, that an earlier GEF project, Efficient Lighting Initiative, is being continued (with residual GEF funds as well as substantial additional support by the Chinese government) by an agency in China, so that

this stakeholder is already involved in one end-use to be covered by the proposed project.

Capacity building aspects.

The project rightfully includes capacity building components. However, the successful implementation of S&L programs does not depend on human capacity building alone. For instance, it is very important that manufacturers and compliance agencies involved in S&L have access to testing laboratories in order to determine the energy and associated performance of the equipment object of the S&L programs. The Project Document mentions the need for testing laboratories, and suggests that host countries would need to provide resources for the design and construction of testing laboratories needed for the independent determination of the energy performance of the equipment involved. Given that GEF funds do not cover these expenses, an effort should be made to ensure that host countries are indeed able to finance these activities.

Innovativeness.

In the earlier years of GEF, when there were few successful projects, one sought innovative solutions to pressing problems. However, at this point in time, there is a large body of GEF experience, and it may be more important to draw and build on this experience rather than looking for further innovations, per se. Moreover, other GEF projects in other regions are also directed at standards and labeling strategies towards improved energy efficiency of energy consuming equipment. Last, but not least, there is a considerable body of successful experience in S&L in industrialized countries, and this can be drawn on for the successful implementation of this and other S&L GEF projects. The Project Document mentions this experience and the sources of information on this experience.

The Executive Summary makes reference to the Efficient Lighting Initiative (ELI) as an ES&L initiative. Note that only a small part of ELI was related to S&L.

Thus, while this project is not innovative, this is not considered to be a disadvantage.

Other observations and suggestions.

A number of other observations and suggestions have been market in the attached versions of the Executive Summary and the Project Document.

Responses to STAP Review Comments

Comments & Responses	Reference
<b>KEY ISSUES</b>	
<b>Scientific and Technical Soundness of the Project</b>	
<p><b>Comment:</b>  <i>Note, however, that some of the BRESL countries already have S&amp;L programs. It is not clear if these programs are successful, and at least one of the countries does not have an effective compliance regime. Thus, the proposed project should explicitly include an evaluation of previous efforts as well as the development of an effective compliance regime. This reviewer believes that such an activity could be added to, or included within, the five program components (see, e.g. p. 17 of Exec. Summary). The evaluation should include actual equipment performance (see following paragraph).</i></p>	

Comments & Responses	Reference
<p><b>Response:</b> The development of the BRESL project involved the conduct of evaluations of previous ES&amp;L efforts and experiences in the region, in general, and in the participating countries, in particular. Such evaluations were based on data gathered through discussions with energy focal points of ASEAN countries and desk reviews during the concept stage of the BRESL, and from additional desk reviews during the PDF-A exercise and from the BRESL Survey. Based on these evaluations, the project proponents were able to get a clear understanding of the existing and persistent issues, problems/barriers, and constraints/limitations in the development and implementation of ES&amp;L programs in the region and in the harmonization of energy efficiency standards and labels. These barriers are described in detail in Section I of the Project Document. Clear understanding of these barriers (including the policy/regulatory barrier of absence of an effective compliance regime) enabled the project proponents to design the interventions that will remove them. These previous, as well as ongoing and planned initiatives in the area of ES&amp;L in the participating countries (hereinafter referred to as BRESL countries) are described in Part I Sec. I of the BRESL ProDoc. The BRESL project builds on these previous efforts and where applicable incorporates planned/programmed ES&amp;L initiatives in each BRESL country and in the region among its baseline activities. To address the point raised by the reviewer, provisions for updating/expanding the evaluation of the ES&amp;L efforts and experiences of each BRESL country in Activity 4.2 (Lessons Learned Reports) have been added.</p> <p>It should be noted that the evaluation of individual country ES&amp;L program implementation performance is also part of the monitoring &amp; evaluation activities of the project as carried out in each BRESL country.</p>	<p>ProDoc: Sec I, Part II, Activity 4.2</p> <p>ProDoc: Sec IV; Part V; Table 25</p>
<p><b>Comment:</b> <i>Note that "Means of Gauging Success" column of the Table in Annex B (Project Planning Matrix) of the Exec. Summary appears not to include any evaluation based on actual performance of the affected equipment. Nor is this included in Part V of the Project Document (Tables 23 and 24). The determination of the actual performance of equipment covered by standards or labeling should be an explicit part of the project, for the outcome to be meaningfully quantifiable.</i></p> <p><b>Response:</b> Both activities 1.2 (standards implementation) and 2.3 (national and regional testing and certification) include work on testing and certification of equipment to ensure that equipment sold really meets the standards. This includes round-robin testing to make sure that different test laboratories are obtaining the same results when testing the same piece of equipment. Additional texts were added in Tables 23 and 24 and to the Project Planning Matrix (Table 14) to reflect this. This comment could also be a request to test a sample of equipment in the field to verify that laboratory tests are reasonable. Such testing has only rarely been conducted in developed countries and is not possible within the very tight budget for this project.</p>	<p>ProDoc: Sec II, Part II, Table 14; Sec IV, Part V, Tables 23 and 24</p>
<p><b>Comment:</b> <i>One of the five components refers to manufacturer support, described as "provision of information and technical assistance," (p. 17 of Exec. Summary). In order to produce more efficient equipment, manufacturers are likely to require investment capital. If the proposed GEF project does not consider that such capital requirements and makes no provisions for it, manufacturers may end up being well informed but unable to</i></p>	

Comments & Responses	Reference
<p><i>manufacture more efficient equipment. This is likely to be especially severe in the poorer BRESL countries such as Bangladesh. The Project Document notes this need, and correctly makes special provisions to encourage financial institutions in Bangladesh to be involved in providing such funds. Moreover, this item should be included among the potential project risks. This reviewer has suggested a line to this effect in Table 22 of the Project Document.</i></p> <p><b>Response:</b> Often the capital costs for more efficient equipment are less than manufacturers fear. This will be one of the items covered in Activity 3.2 (capacity building for manufacturers). That said, project proponents agree that a shortage of capital is a potential risk and we have made the suggested edit to Table 22.</p>	<p>ProDoc: Sec IV, Part IV, Table 22</p>
<p><b>Comment:</b> <i>Another weak link appears to be the equipment sellers, especially for household equipment. ... Some countries, e.g. Thailand, have achieved great success insofar as purchasers understand the energy labels. The training of equipment sellers for household equipment is therefore important and a separate component might be included in the project. The role of equipment sellers is particularly important for the success of labeling programs, where energy efficiency improvement depends on the purchasers' informed decisions.</i></p> <p><b>Response:</b> Several countries will be doing retailer outreach as part of activities that will be carried out under Component 5. However, additional outreach would be useful, and explicit references to this in Activities 1.2, 3.2, and 4.2 have been provided.</p>	<p>ProDoc: Sec I, Part II, Activities 1.2, 3.2, and 4.2</p>
<p><b>Comment:</b> <i>If it is difficult, at this stage, to add more project components, this STAP reviewer strongly recommends that the items mentioned above be included within one or more of the existing five components.</i></p> <p><b>Response:</b> As noted above, these items have been added into the existing project components as suggested by the reviewer.</p>	<p>See individual comments</p>
<p><b>Comment:</b> <i>Since the key barriers facing EE are common to many countries, as are the types of programs needed to reduce such barriers, including S&amp;L, a single GEF project covering several Asian countries makes sense.</i></p> <p><b>Response:</b> The project proponents strongly agree with this comment, and believe that it is the underlying rationale for the importance of the BRESL project.</p>	
<p><b>Comment:</b> <i>Identification of Global Environmental Benefits: It is not possible for this STAP reviewer to check all the emissions reductions estimates. The key assumptions (CO2 emissions factors for power generation in the target countries, and the potential for energy efficiency improvement in the target equipment) appear to be reasonable. Note, however, that two slightly different values of expected emissions reductions over five years are quoted in Part III of the Project Document (highlighted in the text).</i></p>	

Comments & Responses	Reference
<p><b>Response:</b> The CO2 emission reduction figures have been corrected. Correct numbers are emissions reductions of 24.2 million tons of CO<sub>2</sub> in Year 5 of the project, and a cumulative CO<sub>2</sub> reduction of 35.8 million tons.</p>	ProDoc: Sec IV, Part III
<p><b>Comment:</b> <i>Regional Context: The project is regional in scope, involving seven large Asian countries. This allows for experience sharing through project development as well as the creation of common, regional policies to promote EE. Moreover, the project is integrated into APEC activities, including the use of an APEC website, allowing the project to be followed by other countries in the region. The fact that the seven countries use at least seven different official languages (and other languages are not used) could be a serious communication problem.</i></p> <p><b>Response:</b> English is the common language used in the APEC Energy Working Group and the sub-group, the APEC Expert Group on Energy Efficiency and Conservation (EGEE&amp;C), where much of the collaboration on standards and labeling harmonization has taken place over the past eight years, including in development and updating of the APEC Energy Standards Information System (<a href="http://www.apec-esis.org">www.apec-esis.org</a>). The energy experts in the various countries are able to communicate and share information on their various initiatives in English, in both formal and informal interactions. Language is not anticipated as being a serious problem in this project. However, this concern have been noted, and it may be necessary for China to allocate part of its baseline contributions for interpretation at meetings; for translation of BRESL project materials into Chinese; and also for translation of China ES&amp;L materials into English.</p>	
<p><b>Comment:</b> <i>Replicability of the Project ... However, S&amp;L programs are a continuing process, as standards are made progressively more strict (sic), and both standards and labels cover an increasing number of energy consuming equipment. Thus the proposed project is already the replication of successful projects elsewhere. (There should be a greater emphasis on learning from this experience.)</i></p> <p><b>Response:</b> Agree. Note that this is the intention of the lessons learned reports that will be prepared under Activity 4.2. To a great extent, the content and focus of the reports will depend upon the specific interests and demands of both the individual countries, and the Regional Project Management Unit. It is strongly believed that the “learning” will need to take place through the ongoing process of consultation, and note that this will happen at two levels: through the annual meetings of the Regional Project Steering Committee, and through the regular meetings of the Technical Working Groups of each of the selected products.</p>	
<b>SECONDARY ISSUES</b>	
<p><b>Comment:</b> <i>Capacity Building Aspects: The project rightfully includes capacity building components. ... The Project Document mentions the need for testing laboratories, and suggests that host countries would need to provide resources for the design and construction of testing laboratories needed for the independent determination of the energy performance of the equipment involved. Given that GEF funds do not cover</i></p>	

Comments & Responses	Reference
<p><i>these expenses, an effort should be made to ensure that host countries are indeed able to finance these activities.</i></p> <p><b>Response:</b> Two of the BRESL countries (China and Thailand), as well as Korea already have a full complement of test laboratories and regularly fund upgrades to these facilities. Malaysia has set aside funds to build a test laboratory, and such project to establish a test laboratory is among the baseline (i.e., co-financed) activities of BRESL. For the other three countries, project staff and consultants will not only provide technical guidance in establishing testing laboratory facilities but also regularly encourage host countries to finance these activities. In addition, the project will explore other routes to have equipment tested including use of privately owned laboratories (but subject to inspections and periodic round-robin testing) or use of laboratories in other countries (particularly useful when most units sold in a country are imported). For example, for many products, a substantial majority of equipment sold in Bangladesh comes from China and India (and to a lesser extent Korea and Thailand) and thus it may be possible to have many of these products tested in the country of origin. In this regard, the promotion of mutual recognition agreements (MRAs) will be an important part of Activity 4.3. This is clearly noted in the Project Planning Matrix (Table 14).</p>	<p>ProDoc: Sec I, Part II, Component 2; Activity 4.3.</p>
<p><b>Comment:</b> <i>Innovativeness: The Executive Summary makes reference to the Efficient Lighting Initiative (ELI) as an ES&amp;L initiative. Note that only a small part of ELI was related to S&amp;L. Thus, while this project is not innovative, this is not considered to be a disadvantage.</i></p> <p><b>Response:</b> In fact, the Efficient Lighting Initiative is fundamentally an ES&amp;L program, in that it includes a process for certifying and labeling efficient lighting products. The certification process includes energy performance testing by the ELI Quality Certification Institute. And the Institute then issues an endorsement label, indicating that the product in questions meets the efficiency and performance thresholds of ELI. Especially with respect to compact fluorescent lamps (CFLs), it is believed that the BRESL countries will get great benefit from drawing on the ELI experience and considering harmonization of their CFL specifications to the ELI specifications. Note that this has already been done in a <i>de facto</i> sense for recent CFL bulk procurements in Vietnam, and that Indonesia is currently considering a large-scale procurement of CFLs, using loan funds from the Asian Development Bank, and requiring that the CFLs meet the ELI specifications.</p>	
<b>OTHER OBSERVATIONS &amp; SUGGESTIONS</b>	
<b>Executive Summary</b>	
<p><b>Comment:</b> <i>Missing contact from South Korea</i></p> <p><b>Response:</b> South Korea (ROK) has decided that it will participate in the BRESL project not as a GEF recipient country, but as a project partner providing technical assistance.</p>	
<p><b>Comment:</b> The MEPS lead to an immediate reduction in energy use of 4 to 30%, depending on the product - <i>It takes time for manufacturers to adapt to MEPS. Therefore, energy use</i></p>	



Comments & Responses	Reference
<p><i>reduction is immediate only after allowing for this adaptation period. Moreover the levels of reduction in energy use are only applicable to NEW EQUIPMENT manufactured according to the MEPS.</i></p> <p><b>Response:</b> This is a valid comment. The savings analysis assumes that MEPS will be announced after Year 2 and will take effect in Year 4. Paragraph 63 has been modified to reflect this. Please note that Paragraph 64, the analysis that will be carried out only models savings for new products being sold, i.e., it does not include efficiency improvements in the existing stock of equipment.</p>	ProDoc: Paras 63 and 64
<p><b>Comment:</b> The difference between baseline and alternative electricity consumption does not translate to electricity savings attributed to BRESL, since electricity savings also include reductions from reduced purchases of incandescent lamps, and these are calculated at 2.75 times annual unit electricity consumption of CFLs. - <i>This is very important and should appear in the text, and not just in the small print!</i></p> <p><b>Response:</b> Paragraphs 64 and 65 have been added noting this aspect of the analysis. See also Assumptions (Paragraph 4) of the CO2 Emissions reduction Estimates (Sec. IV, Part III).</p>	ProDoc: Paras 64 & 65; Sec IV, Part III.
<p><b>Comment:</b> Manufacturer Support Program - <i>Note that sellers of appliances also need to understand the benefits of energy-efficient appliances to their customers so that they may communicate such benefits in an effective manner. Thus it is imperative that this activity include retailers and not just manufacturers.</i></p> <p><b>Response:</b> This item is discussed above under the third key issue. Activity 3.2 has been broadened to include retailers and have also addressed this issue through expansions to Activities 1.2 and 4.2.</p>	ProDoc: Activities 1.2 and 4.2
<p><b>Comment:</b> Regional Cooperation Program - <i>Besides cooperation among the countries within BRESL, the project should also build on experience in S&amp;L programs in other countries, both industrialized as well as developing countries, including those supported through GEF projects.</i></p> <p><b>Response:</b> Agree. A new paragraph 93 has been added under Activity 4.3: Regional EE Standards and Labeling Network, calling on the GEF to “play an important role by creating a global ES&amp;L network that will allow for the sharing of ES&amp;L experience under the numerous GEF-assisted ES&amp;L programs in the various geographic regions.”</p>	ProDoc: Activity 4.3, Para 93
<p><b>Comment:</b> There will be pilot activities that will be implemented on a demonstration basis by individual countries - <i>It is important that the selected countries are those with least progress in furthering S&amp;L programs. That is, probably not South Korea, China, or Thailand.</i></p> <p><b>Response:</b></p>	

Comments & Responses	Reference
<p>The project is a mix of regional and national activities, with each country selecting their national activities. All four of the BRESL countries with less developed ES&amp;L programs will be doing pilot projects. In addition, Thailand will be doing a pilot project on government procurement and the one in China is on the development of an on-line database of efficient equipment. The Thai and Chinese pilot projects will advance ES&amp;L progress in their countries.</p>	<p>ProDoc: Component 5; Paras 95 - 99</p>
<p><b>Comment:</b> Component 1 indicators: 15% reduction in losses from new electric fans by Year 5 and 20% reduction in losses from rice cookers by Year 5 – <i>Are these reduction in losses, or reduction in overall consumption?</i></p> <p><b>Response:</b> In the case of these two products, it is reduction in overall electricity consumption. The wording on this item has been changed in the Project Document.</p>	<p>ProDoc: Sec II, Table 14</p>
<p><b>Note: All other suggested corrections (typographical and grammatical) in the Executive Summary are noted and have been addressed accordingly.</b></p>	
<p><b>Project Document</b></p>	
<p><b>Comment:</b> Paragraph 28: For instance, Indonesia, which manufactures, and imports relatively few, refrigerators, still imports refrigerators from eleven Asian countries and exports refrigerators to these same eleven plus four other Asian countries. - <i>Something wrong with the writing here. As written it suggests that Indonesia neither manufactures nor imports many fridges.</i></p> <p><b>Response:</b> The statement has been revised to indicate that Indonesia manufactures refrigerators. The country imports refrigerators from 11 Asian countries, but also exports refrigerators to the same 11 Asian countries and 4 others.</p>	<p>ProDoc: Para 28</p>
<p><b>PART III: CO2 Emissions Reduction Estimates</b></p>	
<p><b>Comment:</b> The implementation of ES&amp;L initiatives catalyzed by the BRESL project will lead to 20.13 million tons of CO2 in Year 5 of the project, and a cumulative CO2 reduction of 29.68 million tons [Summary; 1<sup>st</sup> paragraph; 2<sup>nd</sup> to last sentence]. The estimated CO2 emissions reductions for this project are quite large – 24.2 MMT CO2/year in Year 5, and 35.8 cumulative MMT CO2 in Year 5 (2011) [Assumptions, 3<sup>rd</sup> paragraph; 1<sup>st</sup> sentence]. – <i>Values quoted are different.</i></p> <p><b>Response:</b> The error has been corrected. The correct numbers are 24.2 MMT CO2/year in Year 5, and 35.8 cumulative MMT CO2 in Year 5 (2011).</p>	<p>ProDoc: Sec IV, Part III</p>
<p><b>Comment:</b> <i>The products don't emit CO2, rather the fuel burnt in power plants where the electricity is generated.</i></p> <p><b>Response:</b> Correct. Have reworded the text in the relevant paragraph (Sec IV, Part III, Assumptions, 3<sup>rd</sup> Para)</p>	<p>ProDoc: Sec IV, Part III</p>
<p><b>Part IV: Project Risks and Assumptions</b></p>	
<p><b>Comment:</b></p>	

Comments & Responses	Reference
<p>Investments for EE equipment/appliance retrofits may not be available- <i>The items covered in this S&amp;L project are unitary equipment that would be replaced by efficient equipment, probably at the end of their useful life. They would not be retrofitted.</i></p> <p><b>Response:</b> This sentence was an error and has been deleted. Instead, a new sentence was added as suggested in the next comment.</p>	ProDoc: Sec IV, Part IV
<p><b>Comment:</b> <i>Suggested Risk - Financing of investments for manufacturers to modify their production facilities may not be available.</i></p> <p><b>Response:</b> The suggested sentence has been added. This item is also discussed above under the third key issue.</p>	ProDoc: Sec IV, Part IV
<p><b>Note: All other suggested corrections (typographical and grammatical) in the Project Document are noted and have been addressed accordingly.</b></p>	

**GEF Secretariat and Other Agencies' Comments and IA/ExA Response**

**GEFSec Review 25 February 2008**

Comment & Response	Reference
<b>Endorsement</b>	
<p><b>Comment:</b> <i>Endorsements are available from six countries (Pakistan has been added): China: \$2m; Indonesia: \$1.8m; Bangladesh: \$1m; Thailand: \$1m; Vietnam: \$1m; Pakistan \$1m + agency fee. Since only Pakistan explicitly indicates agency fee in addition to the project amount, please confirm that the OFPs have all agreed to add the agency fee to the amount that they have endorsed (to be drawn from their indicative RAF allocations). Please note that the agency fee also applies to PDF-A.</i></p> <p><b>Response:</b> The letter of endorsements (LOE) of Bangladesh, China, Indonesia, Thailand and Vietnam were issued by their respective national GEF Operational Focal Points before the June 2007 GEF Council's new instruction on the specific mention of the 10% IA fee in the LOE. We have informed/reminded the respective OFPs about that and they have acknowledged and accepted the fact that the GEF wanted that the GEF IA fee be taken from their respective GEF-4 allocations (in this case their CC allocations). However, they stop short of issuing new LOEs. Hence, it was decided by the regional project team and the UNDP to still use the old LOEs with the understanding that the OFPs agreed that an additional 10% will be deducted from their GEF-4 CC allocation for payment of the GEF IA Fee.</p> <p>Based on the country profile window in the GEF website at <a href="http://www.gefonline.org/Country/CountryProfile.cfm">http://www.gefonline.org/Country/CountryProfile.cfm</a>, it is clearly stated that for these 5 countries, the GEFSec has already deducted the corresponding GEF IA Fees (@ 9%) of these countries for their respective contributions to BRESL.</p>	Refer to URL, check on each country.

Comment & Response				Reference
BRESL Country	RAF Contribution, \$M	GEF IA Fee, \$M	Total Transaction Cost, \$M	
Bangladesh	1.00	0.09	1.09	
China	2.00	0.18	2.18	
Indonesia	1.80	0.16	1.96	
Thailand	1.00	0.09	1.09	
Vietnam	1.00	0.09	1.09	
<b>Monitoring &amp; Evaluation</b>				
<p><b>Comment:</b>  <i>Expected cumulative CO2 emissions reduction amounts to 37m tons ("direct") by end of project, 1.2b tons by 2021 and 3.9b tons by 2031. All of these estimates clearly are indirect, rather than direct, reductions.</i></p> <p><b>Response:</b>            Perhaps we can qualify the word "direct" by saying that the projected CO2 emission reductions are directly facilitated or influenced by the BRESL activities, that that the BRESL activities are directly impacting the transformation of the appliance/equipment market in the BRESL countries leading to energy savings and CO2 emission reductions. Considering the fact that BRESL is comprised mainly of policy related, technical assistance, and capacity building activities, there will be CO2 emission reduction that would directly result from such enabling activities. The BRESL activities will facilitate or influence such reductions. But due most likely to policy lags, as well as lags in the enforcement of the BRESL-established enabling environments, frameworks and policy regimes to effect the actions (e.g., increased manufacturing and application of EE appliances/equipment) we concur that the projected CO2 emission reductions are "indirect". The necessary revision of the word in Part III: CO2 Emissions Reduction Estimates of the Project Document have been made.</p>				ProDoc: Part III, pp. 90-94
<p><b>Comment:</b>  <i>There are a lot of assumptions involved in the above estimates, and there is little detailed baseline information. The M&amp;E plan indicates that the baseline will be established through Activity 2.4 by Yr 3. But description of that activity is very general (about data collection), and it is not clear exactly what will be done to establish the baselines. Since baselines will be of critical importance to measure the success of the project, more elaboration is needed as to how this will be carried out.</i></p> <p><b>Response:</b>  <u>The baselines that will be established in Activity 2.4 are on the market share of the energy efficient versions of the different BRESL products using the model data collection and reporting procedures (as part of the EE appliance/equipment market monitoring scheme) that will be developed.</u> Activity 2.4 addresses the need for a system of recording, collecting and evaluating data on equipment energy use and how this use is changing over time that can be uniformly applied by the countries in the region, starting with the BRESL countries. Such data are needed to set standards and to monitor standard implementation and benefits in each country.</p> <p>The assumptions that were used in the CO2 emission estimates are based on the findings from the BRESL Survey, previous work done by ACEEE and IIEC (who were the consultants that worked on the project during the PDF-A exercise), APEC-ESIS, and from</p>				ProDoc: Part I; Activity 2.4; Paras 87-88  Annexes C & E

Comment & Response	Reference
<p>available extracts of Electrical Appliances Market Reports from Global Information, Inc. (2006). These were the best possible, based upon an exhaustive review of available data and references from the BRESL countries.</p>	
<p>The baseline establishment in Activity 2.4 will actually be done in Year 2, not in Year 3. It should be noted that the annual work plan (Sec III, Table 15) shows that Activity 2.4 starts in Year 1. During Year 1, Activity 2.4 will focus on the design of the various components of the market monitoring scheme such as the data survey/gathering and reporting forms, data survey/gathering and reporting procedures/guidelines; training on the market monitoring scheme and in the use of the data survey/gathering and reporting forms; market data analysis, and, the promotion and endorsement of the data survey/gathering and reporting activities. The data gathering and reporting may start in the latter part of Year 1.</p>	<p>Activity 2.4; Paras 87-88</p>
<p><b><u>It should be emphasized that the baselines that will be established are for the EE appliance/equipment market monitoring. The baselines (% share of what are regarded as EE products in the national and regional appliance/equipment markets in 2004) that were used during the BRESL project design will be verified and most likely adjusted based on the inputs from the initial data survey/gathering and reporting that will take place in Year 2.</u></b> The market monitoring activity will, among others, set up key indicators that will progressively manifest the development and status of the EE appliance/equipment market in each BRESL country and in the region. Using the data that will be collected during the 2nd year of the project implementation, the baselines and annual targets for the market performance will be set. The market performance will be monitored based on parameters such as, but not limited to: (1) product market share (based on sales volumes); (2) product price; (3) product energy efficiency performance; and, (4) customer satisfaction in terms of number of units purchased/used per household. These parameters will be monitored by each designated implementing partner in each BRESL country.</p>	<p>Activity 2.4; Paras 87-88</p>
<p>The details on how the data gathering and reporting will be carried out in order to, among others, establish the baselines are stated in Activity 2.4.</p>	<p>Footnotes in Activity 2.4</p>
<p><b><u>Comment:</u></b> <i>If it takes three years to establish the baselines, is it going to be realistic to expect meaningful evaluation of the project results by Yr 5 or 6? It seems that data collection and baseline establishment (product by product and country by country) should be undertaken as soon as project implementation starts.</i></p> <p><b><u>Response:</u></b> As in the response in the previous comment, it should be emphasized that the baselines that will be established are for the EE appliance/equipment market monitoring, and the baseline data are on the EE appliance/equipment market performance in each country and in the region.</p> <p>Activity 2.4 is relevant to the data collection and baseline establishment. During Year 1, this activity will focus on the design of the various components of the market monitoring scheme such as the data survey/gathering and reporting forms, data survey/gathering and reporting procedures/guidelines; training on the market monitoring scheme and in the use of the data survey/gathering and reporting forms; market data analysis, and, the promotion</p>	<p>Activity 2.4; Paras 87-88</p>

Comment & Response	Reference
<p>and endorsement of the data survey/gathering and reporting activities. Actual data gathering and reporting may start on the later part of Year 1, and continue in Year 2. The baselines (more reliable and consistent) will be established by end of Year 2 using the data that were gathered and reports that were evaluated. The baselines that were used during the BRESL project design will be reviewed, verified and most likely adjusted based on the inputs from the initial data survey/gathering and reporting that will take place in Year 2.</p> <p>With the market monitoring scheme described above, it is expected that a reliable and meaningful assessment of the national and regional EE appliance/equipment markets, as well as that of the BRESL project can be realized.</p>	
<p><b>Comment:</b> <i>It is also important to consider whether the assumptions are realistic and meaningful. Based on the additional data to be collected (e.g., EE by project category), both the assumptions and the targets may need to be revised or reformulated.</i></p> <p><b>Response:</b> Along with the baselines that were used in the BRESL project design, the underlying assumptions that were used will also be reviewed, verified and most likely adjusted or revised based on the inputs from the initial data survey/gathering and reporting that will take place in Year 2. The baseline assumptions will be cross-checked and adjusted during the initial project phase as part of the design of the market monitoring scheme to ensure that there is a consistent methodology for collecting data on important indicators such as saturation rates, sales by appliance/equipment type, unit efficiency levels, etc. Actually, the review and any necessary revision or adjustment of the assumptions and targets will be done on a continuous basis during the life of the project as part of adaptive management and the annual PIR process.</p>	<p>Activity 2.4; Paras 87-88</p>
<p><b>Comment:</b> <i>Finally, although the emissions reduction is considered "direct" (should be "indirect" at best), there seems to be a huge gap between the proposed project activities (mostly capacity building) and impact of the project in terms of energy savings and CO2 emissions reduction to be realized. Please discuss how M&amp;E can help overcome this "gap".</i></p> <p><b>Response:</b> The policy-related, capacity building, awareness-raising and enabling activities that will be carried out under BRESL will also provide the necessary understanding and knowledge for the energy consumers in each BRESL country (in the residential, commercial, industrial and public sectors) on the proper application of EE appliance/equipment in their premises and operations. The EE appliance/equipment market monitoring scheme that will be developed and implemented in Activity 2.4 will provide the necessary instrument (including the necessary capacity development for its implementation) to gather, analyze and report the data that would manifest the impacts of BRESL in terms of energy savings and CO2 emission reductions.</p> <p>Apart from the market monitoring scheme, each BRESL country will prepare its overall M&amp;E plan (5 years) based on the overall country work plan, and also based on the BRESL project planning matrix (Table 14), BRESL annual targets (Table 23) and BRESL monitoring plan (Table 24). Like the overall BRESL M&amp;E plan, this will consist of success indicators (output and impact) with realistic targets and time lines, and backed up</p>	<p>Activity 2.4; Paras 87-88</p> <p>Para 150</p>

Comment & Response	Reference
<p>with clear means of verification, and assumptions. The capacity building on M&amp;E that is part and parcel of the design of the overall EE appliance/equipment market monitoring scheme in Activity 2.4 is expected to enable the country team to carry out the monitoring activities as well as make meaningful assessments of the data gathered/reported. Each activity/task that will be carried out will be monitored in terms of the appropriate output indicators (for the activity deliverables) and the impact indicators (for the impacts). The targets will be reviewed each year and any necessary revision or adjustment of these, as well as the assumptions will be done on a continuous basis during the life of the project as part of adaptive management.</p> <p>Moreover, countries with supplementary activities under each component of the BRESL project will develop their specific M&amp;E plans for tracking progress and assessing impacts. Inasmuch as such activities are part and parcel, and contributing to the achievement of the objectives, of BRESL, their specific M&amp;E plans will be by and large also based on the project planning matrix in Table 14. Each task that will be carried out under the supplementary activities will be monitored in terms of the appropriate output indicators (for the activity deliverables) and the impact indicators (for the impacts). The capacity building that will be done in Activity 2.4 will also be put to good use in the monitoring of the parameters that will be used in assessing and quantifying the impacts (energy savings and CO2 emission reductions) of the supplementary activities.</p>	
<b>Financing Plan</b>	
<p><b>Comment:</b> <i>Project management budget is \$0.975m or 12.5% of the GEF grant, which exceeds the maximum allowable 10%. Given that this is a regional project, project management cost will likely be high and may go for the 10% maximum, but it should not exceed that amount.</i></p> <p><b>Response:</b> The PMO cost when the BRESL was approved by the GEF Council (i.e., when Pakistan is not yet included) in June 2007 was 13.2% @ US\$ 900K. When Pakistan was included this was increased to US\$ 975K @ 12.5%. Reducing the PMO cost may somehow affect the supervision of regional activities. Nonetheless, we will comply with the GEF's official guideline of 10% maximum PMO cost by ensuring that the co-financing from the BRESL countries will cover the deficit.</p>	<p>ProDoc: Sec III; Table 15, p. 86 CER: Part I; Sec A.</p>
<p><b>Comment:</b> <i>The budget for international consultants under project management is especially high, accounting for over 70% of the total. This should be reduced, and local consultants should be used instead whenever possible and feasible (in line with COP13 decision on GEF). This also applies to the budget for international consultants for TA.</i></p> <p><b>Response:</b> The regional activities of BRESL will utilize international consultants. As much as possible, these ES&amp;L consultants are those that are based in the region. About a third of the consultancy cost for the BRESL regional activities are accounted for by consultants from the region. While it would be more practical to engage the services of such consultants since they are knowledgeable of the ES&amp;L situation in the region, the problem is that there is very limited number of ES&amp;L experts in Asia.</p> <p>For national activities, local consultants (either as an individual or as a group) will as</p>	<p>CER: Annex C</p>

Comment & Response	Reference														
<p>much as possible be utilized. They will be used mainly in support activities that would not necessarily need ES&amp;L expertise (e.g., market surveys, website development). During the PDF-A exercise, when the project was being designed, it was found out (based on the views of the stakeholders from each BRESL country) that ES&amp;L is still considered a relatively new concept in some of the BRESL countries. In that regard, there are very few national consultants whose services can be engaged in the implementation of the national activities that requires ES&amp;L knowledge and expertise. Because of that, there is no choice but to utilize international consultants, and where available regional consultants. Moreover, inasmuch as most of the national activities are capacity building, policy-related and technical assistance in nature, it would be necessary to utilize foreign experts who are expected to provide/share/transfer knowledge and skills to the local experts and personnel.</p> <p>Much as it is desirable to make use of local consultants for the national activities, it will be unwise to designate and budget local experts for this project that may not really be available, or whose knowledge and expertise on ES&amp;L are relatively limited.</p>															
<p><b>Comment:</b> Please explain "contract management fees" under the Project Management Budget for both GEF and co-financing.</p> <p><b>Response:</b> Like in all other UNDP-GEF projects in China, we are obligated to involve the China International Center For Economic And Technical Exchanges (CICETE) in the project management. CICETE provides major management services such as in the purchase of the service of foreign-based consultants or equipment; bidding; contract management; payment; audit, etc, depending on the instructions and request from the project owner. Due to China's foreign currency control policy, any business or contract in foreign currency within the country is prohibited. Exceptions apply to joint ventures and some special agencies approved by the government, particularly for international project management such as CICETE. The "contract management fees" are practically CICETE's fees, which is negotiable but is at least 3% of the project cost. In the case of BRESL, it is at least 3% of the China contribution and the budget for the regional activities.</p>	<p>ProDoc: Sec III; Table 15, p. 86 CER: Annex C</p>														
<p><b>Comment:</b> The budget table includes items labeled "miscellaneous". They amount to nearly \$400k under Outcome 1 and \$300k under Outcome 2. Please specify what they are.</p> <p><b>Response:</b> The standard UNDP budget system include a budget line item "miscellaneous", which include expenses for meetings, workshops, training courses, press conferences and special expenses that cannot be classified in the UNDP budget system. The following is a summary of the specific "miscellaneous" expenses:</p> <table border="1"> <thead> <tr> <th>Tag</th> <th>Activity</th> <th>Country(ies)</th> <th>Cost</th> </tr> </thead> <tbody> <tr> <td colspan="4"><b>Component 1</b></td> </tr> <tr> <td rowspan="2">Activity 1.1</td> <td>Advocacy and consultation meetings on proposed ESL policies and national ESL program</td> <td>All</td> <td rowspan="2">117,000</td> </tr> <tr> <td>Workshops - Capacity building on ESL policy research, design and decision making</td> <td>All</td> </tr> </tbody> </table>	Tag	Activity	Country(ies)	Cost	<b>Component 1</b>				Activity 1.1	Advocacy and consultation meetings on proposed ESL policies and national ESL program	All	117,000	Workshops - Capacity building on ESL policy research, design and decision making	All	<p>ProDoc: Sec III; Table 15; pp. 82-86</p>
Tag	Activity	Country(ies)	Cost												
<b>Component 1</b>															
Activity 1.1	Advocacy and consultation meetings on proposed ESL policies and national ESL program	All	117,000												
	Workshops - Capacity building on ESL policy research, design and decision making	All													



Comment & Response				Reference
Activity 1.2	Advocacy and consultation meetings on proposed ESL regulations	All	277,000	
	Workshops - Capacity building on ESL development, and setting of implementing rules & regulations	All		
<b>Component 2</b>				
Activity 2.1	Workshops - Training to strengthen and enable public institutions to support development and implementation of ES&L programs	Regional	95,000	
Activity 2.2	Consultation meetings on the development and implementation of ESL for the targeted BRESL products		102,000	
Activity 2.3	Round-Robin Testing	Regional	225,000	
	Workshop - Market Monitoring	China	18,000	
	Purchase of test products to be used in the workshop on market monitoring	China	50,050	
Activity 2.4	Consultation meeting on the EE appliance/equipment data survey and reporting	Regional	25,000	
	Meetings & Workshops on the application of the data gathering and reporting models	All	54,000	
<b>Component 3</b>				
Activity 3.2	Educational Workshops for Manufacturers/Retailers on Impacts of Standards and Ways to Work with Standards to Increase Profitability	All	120,000	
Activity 3.3	Implementation of Voluntary Agreement program with local appliance/equipment manufacturers	Indonesia	95,000	
<b>Component 4</b>				
Activity 4.1	Fee for website hosting	Regional	25,000	
Activity 4.3	Consultation meetings on the Regional ESL Network	Regional	22,500	
	Setting up and operationalization of an information sharing network	Indonesia	60,000	
Activity 4.4	Consultation meetings on the Regional ES&L Harmonization Initiative	Regional	65,000	
Activity 4.5	Consultation meetings and workshops on the planning of post-BRESL regional activities and coordination	Regional	31,000	
<b>Component 5</b>				
Activity 5.1	Consultation and advocacy meetings; and workshops on the piloting of government procurement programs for EE products	Bangladesh, Indonesia, Thailand & Vietnam	90,500	

Comment & Response				Reference
Activity 5.2	Fee for website development and hosting		40,000	
Activity 5.3	Workshops and press conferences on the implementation of consumer education schemes for EE products	Indonesia	95,000	
	Advocacy meetings on the implementation of consumer education schemes for EE products	Bangladesh & Pakistan	43,770	
Activity 5.4	Advocacy and consultation meetings on ES&L initiatives financing	Indonesia	12,500	
Activity 5.5	Design and implementation of specific pilots for the ESL harmonization processes; workshops on the results of the pilots	China	200,000	
<b>Project Management</b>				
	BRESL inception meeting & meeting proceedings	Regional	50,000	
<b>TOTAL</b>			<b>1,913,320</b>	
<b>Implementing Agency Fees</b>				
<p><b>Comment:</b>  <i>The agency fees indicated in Table B, The project was approved by Council in June 2007 for \$6.8m (without Pakistan), at which time the applicable agency fee was 9%, on both the project and PDF-A (totaling \$0.6165m), which was proportionally assigned to the participating countries: Bangladesh, Thailand and Vietnam: \$90.662k each; China: \$181.324k; and Indonesia: \$163.191k. The additional agency fee associated with the addition of Pakistan is \$90k (\$1m x 9%). This is the amount that UNDP will be entitled to after the CEO has endorsed the project.</i></p>				
<p><b>Response:</b>            Agree. However, isn't it that the GEF IA fee for Pakistan should be at 10% (as stated in their LOE) because they joined after June 2007?</p>				CER: Part I; Sec D
<b>Consultation, Coordination, Collaboration between IAs, and IAs and EAs, if appropriate</b>				
<p><b>Comment:</b>  <i>Please discuss whether the proposed project implementation arrangements have been explicitly agreed to by all the participating countries (which agencies?).</i></p>				
<p><b>Response:</b>            The implementation arrangements that were described in the Project Document (ProDoc) are based on the agreements among the stakeholders from each BRESL country starting with the regional consultation meeting that was held in Beijing in 2006. Subsequent consultations with each stakeholder were carried out at various points in time such as during the time of: (1) preparing the ProDoc &amp; Executive Summary; (2) re-pipelining process for BRESL in late 2006; and, (3) responding to GEFSec and GEF Council comments.</p>				ProDoc: Sec I; Part III; Paras 136-151
<p>The designated implementing partners in each country are as stated in Footnote 6 of Paragraph 76 of the ProDoc. These are as follows: Bangladesh - Bangladesh Standards &amp;</p>				Footnote 6; Para 76

Comment & Response	Reference
<p>Testing Institute (BSTI); China - National Development and Reform Commission (NDRC); Indonesia - Directorate General for Electricity and Energy Utilization (DGEEU); Pakistan – Ministry of Energy; Thailand - Department of Alternative Energy Development and Efficiency; and, Vietnam - Ministry of Industry (MOI).</p> <p>It should be noted that the proposed implementation arrangements will be discussed once more and finalized during the inception phase of the BRESL, which will start once we have secured the GEF CEO Endorsement and the signature of the participating countries on the ProDoc.</p>	
<b>Summary Recommendation by PM</b>	
<p><b>Comment:</b> <i>PM will recommend for CEO endorsement after the above issues have been fully addressed.</i></p> <p><b>Response:</b> We believe that we have adequately responded to the comments raised and have accordingly made revisions in the ProDoc. In that regard, we expect that the GEF CEO endorsement for the BRESL project soon.</p>	

#### GEFSec Review 10 January 2007

The following are the responses to the additional comments of the GEFSec on the information in the BRESL Supplementary Annex. The other comments were already responded in 2005 during pipeline entry.

Comments & Responses	Reference
<p><b>Comment:</b> <i>When the concept was initially pipelined, there were 12 countries involved in this regional project. The current version indicates only 6 countries. Why are the other 6 countries dropped? So far, only Indonesia, China, and Pakistan have indicated that they will contribute their RAF allocations to this project. What's the status of buy-ins from other countries?</i></p> <p><b>Response:</b> The main reason why the other 7 countries have decided to withdraw their participation from the project is the <u>limited GEF-4 climate change allocation that they got under the RAF</u>. Three of them (Nepal, Republic of Korea &amp; Sri Lanka) are among the “Group” countries, which don’t have specific allocations. Three countries (Cambodia, Malaysia &amp; Philippines) decided not to join because they have prioritized national projects instead of regional projects for their GEF-4 climate change portfolio. Pakistan initially intended not to join because it wants to prioritize national projects for its GEF-4 CC program. Later, it decided to join late in the project design (mid-February 2007) but can’t be accommodated because of lack of data to work with. Although these countries are unfortunately constrained in joining this regional endeavor, they still consider the proposed project as important in supporting their national energy and sustainable development objectives. They have expressed their intentions to participate on their own in some of the regional activities during the course of implementation of the project. In the case of the Republic of Korea, they are still included in the project but not as a GEF beneficiary. They are part of the project as a provider of technical assistance. They will co-finance part of the technical capacity development activities of the project, bringing</p>	<p>Letter of Endorsements (as per GEF-4 requirements)</p>

Comments & Responses	Reference
<p>in their expertise in the area of ES&amp;L. Australia has also indicated to provide technical assistance in the regional harmonization activities that will be carried out under the project.</p> <p>The LOEs from all 5 participating countries (i.e., BRESL countries) - Bangladesh, China, Indonesia, Thailand and Vietnam – are included as annexes to the BRESL Project Document.</p>	
<p><b>Comment:</b>  <i>GEF financing: Project 6m: management budget 1.5m; TA consultant budget: 2.51m. The management cost seems quite high, accounting for 25% of the total GEF funding. Furthermore, there is zero co-financing for project management cost.</i></p> <p><b>Response:</b>  The budget table in the BRESL Project Document (which has been prepared and as of 20 September 2006 ready for submission for the cancelled December Work program) shows that overall, the GEF contribution of US\$ 6.0 million is distributed as follows: 60% for national activities (in each BRESL country); 25% for regional activities (participated in by all BRESL countries); and, 15% for project management (US\$ 900,000). The project management expenses include: (1) Regional PMU costs; (2) PMO costs in each BRESL countries; and, (3) Monitoring &amp; Evaluation (including audit) costs. There are actually co-financing for project management. The amount varies for each BRESL country and ranges from 4.7% to 6.8% (in-kind and cash), or an overall average of 5.1%.</p> <p>Some mistakes (as compared to the budget table in the BRESL Project Document) were made during the preparation of the budget summary (Item 2) in the BRESL Supplementary Annex. These have now been corrected and revised to be consistent with that in the revised BRESL Project Document.</p>	<p>ProDoc: Sec. III (Total Budget &amp; Work Plan)</p> <p>Supplementary Annex (Item 2)</p>
<p><b>Comment:</b>  <i>Timeframe: Preparation: 05/2006 to 10/2006; Implementation: 04/2007 to 03/2012. The timeframe for project preparation seems unrealistic. Does this mean the project has been fully prepared by now?</i></p> <p><b>Response:</b>  The BRESL Project Document and Executive Summary were completed on 20 September 2006 and ready for submission for the December 2006 Work Program. However, the submission was put on hold following the decision of the GEFSec not to accept and process regional projects for the December 2006 Work Program.</p>	
<p><b>Comment:</b>  <i>Impact: The project claims to reduce 24m tons of CO2 by project end and 200m tons 10 years after the project, etc. These estimates, together with other expected outcomes; need to be substantiated, with clear, reasonable baselines and rigorous analysis.</i></p> <p><b>Response:</b>  The estimation of the CO2 emission reduction that can be potentially influenced and realized through the interventions that will be carried out and the enabling environment (e.g., technical capacity improvement, policies and regulations concerning ES&amp;L both at the regional and national levels) that will be created are summarized in Sec IV; Part III of the BRESL ProDoc. The information/data used were derived from the ES&amp;L</p>	<p>ProDoc: Sec. IV; Part III, pp. 79-83  Annex C - pp. 95-97</p>

Comments & Responses	Reference
studies and the BRESL Survey that were carried out during the PDF-A exercise. These are summarized in Annexes C [Assumptions in Baseline and Alternative Scenario] and D [Overview of Project Impacts in terms of Energy Savings & CO2 Emission Reductions, by Country] of the BRESL ProDoc.	Annex D – pp. 98-100
<p><b>Comment:</b> <i>PM recommends the concept for re-pipelining, but Agency is requested to take the above issues into account.</i></p> <p><b>Response:</b> With the revisions incorporated in the ProDoc and Executive Summary, based on the responses to the GEFSec comments, it is hoped that the ProDoc will now be endorsed for inclusion in the June 2007 Work Program.</p>	
<p><b>Comment:</b> <i>Please check and correct the ratification dates given in the table on p. 3.</i></p> <p><b>Response:</b> Based on the list of Status of Ratification of the UNFCCC (22 Nov 2006), the stated ratification dates of the BRESL countries are correct.</p>	<a href="http://unfccc.int">http://unfccc.int</a>

**GEFSec Review 09 April 2007 (including responses to comments on 19 April telecon)**

Comments & Responses	Reference
<b>Country Eligibility</b>	
<p><b>Comment:</b> The ratification dates provided are still incorrect.</p> <p><b>Response:</b> The UNFCCC ratification dates of the BRESL countries have already been corrected.</p>	Executive Summary, Page 3
<b>Endorsement</b>	
<p><b>Comment:</b> Endorsements are available from: China, September 12, 2006, \$2m; Bangladesh, September 14, 2006, \$1m; Indonesia, September 18, 2006, no amount?</p> <p><b>Response:</b> The letter sent by the Indonesian GEF OFP to the GEF CEO on 15 September 2006 presents the list of endorsed projects from Indonesia, one of which is BRESL. The list indicates that US\$ 1.8 M of Indonesia's GEF-4 CC allocation is earmarked for BRESL. Please see attached.</p>	Indonesia GEF OFP LOE
<p><b>Comment:</b> Endorsements from Thailand and Vietnam are not attached.</p> <p><b>Response:</b> The national GEF OFPs of Thailand and Vietnam signed their LOEs for BRESL on 11 April, and 25 April, respectively. Please see attached.</p>	Thailand GEF OFP LOE; Vietnam GEF OFP LOE
<p><b>Comment:</b></p>	

Comments & Responses	Reference
<p>Regarding Pakistan, it is puzzling that UNDP only learned about its intention to participate a few weeks ago and therefore wasn't able to include it in this regional project, when in fact Pakistan's OPF had endorsed this project with \$0.5m RAF contribution back in September 2006.</p> <p><b>Response:</b> Pakistan initially indicated in June 2006 that it will prioritize national projects for GEF-4. Later, they endorsed the project with US\$ 0.5 M of their GEF-4 CC allocation. During the time of the PDF-A exercise, we were advised by the UNDP country office in Islamabad that the government is re-thinking its intention to support this regional project. We completed the BRESL design and prepared the BRESL ProDoc (for submission to the December Council WP, which was cancelled) in September 2006. After the country's GEF OFF's telecom with the GEFSec in January, UNDP-Islamabad informed us that the government is again interested in participating in BRESL and would like to increase its contribution to US\$ 1.0 M. We requested for information that we can utilize for designing and costing the appropriate activities that will be carried out in-country, and for estimating the potential CO2 emission reductions that can be attributed to the BRESL activities in the country. Up until the week of 19 March, we haven't received the required information.</p> <p>UNDP-Pakistan was consulted again on 20 April regarding Pakistan's decision to join BRESL. UNDP-Pakistan said that the country is still interested and may also consider increasing their contribution to BRESL from their GEF-4 CC allocation to US\$ 1.0M. Data gathering work will be carried out to come up with the design of the relevant activities and estimates for the potential energy savings and CO2 emission reductions that can be attributed from the BRESL activities in Pakistan. The identified activities commensurate to the final endorsed amount of contribution to BRESL will be reflected in the revised ProDoc that will be submitted for GEF CEO Endorsement.</p>	
<p><b>Comment:</b> If the project still stands at \$6m, what are the contributions from all</p> <p><b>Response:</b> The total GEF contribution has been revised to US\$ 6.8M to reflect the correct amount that Indonesia has earmarked for BRESL. The contribution of the BRESL countries are as follows: Bangladesh: US\$ 1.0M; China: US\$ 2.0M; Indonesia: US\$ 1.8M; Thailand: US\$ 1.0M; and, Vietnam: US\$ 1.0M.</p> <p>In view of the increased contribution from Indonesia (based on the endorsed amount in the country's GEF OFF's LOE), the number of activities that will be carried out by Indonesia (national and regional) under BRESL have been adjusted to correspond to the US\$ 1.8M endorsed amount for BRESL. UNDP-Jakarta advised that they think the implementing partner in Indonesia (i.e., DGEEU) would agree to increase the number of activities for the country under the project. Based on the information available from the BRESL Survey in Indonesia, a proposed list of additional activities, and these (including their budget estimates) are already incorporated in the most recent version of the BRESL ProDoc. UNDP-Jakarta advised that in principle the proposed additional activities are acceptable to DGEEU since these are more or less the activities that DGEEU also suggested to address current issues on ES&amp;L program development and implementation in Indonesia.</p>	<p>ProDoc: Sec II; Part I; Para 21 (Table 12A)</p> <p>ProDoc: Sec I; Part II; Paras 75, 77, 82, 84, 93, 99, 106 &amp; 112</p>

Comments & Responses	Reference
<p><b>Project Design</b></p> <p><b>Comment:</b> The number of participating countries is down from 12 to 5. Discuss the implications. To what extent will the rationale for a regional project be undermined? What remedies can and will be taken?</p> <p><b>Response:</b> The BRESL project still consists of countries that more or less represent the originally conceived combination of participants. It still have the countries that are considered well advanced in the area of ES&amp;L (China and South Korea); countries that currently have fairly well developed ES&amp;L programs for specific products (Thailand and Vietnam); and those whose ES&amp;L efforts can be considered as still in the development stages (Bangladesh and Indonesia). In that regard, the original idea of south-south cooperation and transfer of knowledge/technology in the field of ES&amp;L is still possible, albeit the coverage is smaller. All BRESL countries, particularly China, South Korea and Thailand, are also very keen in pursuing the development and implementation of regional harmonization, at least starting with the testing procedures. We believe that with the current combination of countries involved in BRESL, the regional aspiration to expand cooperation and sharing of information, and in particular, to develop and implement harmonized ES&amp;L procedures is still achievable. This is because 2 of the BRESL countries (China and South Korea) are at the forefront of such regional aspiration. With China in the lead, the project can still facilitate regional cooperation among the BRESL countries laying the groundwork for eventual harmonization, or mutual recognition of energy standards &amp; test procedures. In so doing, the overall effect of increased rate at which energy efficient products are developed by local manufacturers, recognized and supported by government policy, and purchased and used by consumers, can still be achieved.</p> <p>The following are the implications of a lower than expected number of participating countries in BRESL:</p> <ol style="list-style-type: none"> <li>1. Lost opportunities for countries like Cambodia and Nepal, which are just starting to develop their ES&amp;L initiatives, to benefit from the experiences that they can learn from the other BRESL countries; and from the additional technical assistance for capacity building on the development of ES&amp;L programs.</li> <li>2. Lost opportunities for countries like Malaysia, Pakistan and Sri Lanka to enhance their existing knowledge base and skills in the development and implementation of national ES&amp;L programs, and to assist in their present plans to promote locally produced energy efficient appliances/equipment to other countries in the region.</li> <li>3. Lost opportunities to tap on the experience countries like the Philippines, which has one of the oldest and most solidly established ES&amp;L programs in Asia. Due to its constrained (due to limited GEF-4 CC allocation) participation in the BRESL, it also loss its opportunity to share its experiences on ES&amp;L and to access technical assistance on better performing appliances in the more developed markets.</li> </ol> <p>Recognizing the importance of south-south cooperation and technology/knowledge transfer on energy efficiency within the region; the need to enhance awareness and the practice of energy conserving practices and energy efficiency technologies; and the fact that product markets are not defined by political boundaries, and energy using-</p>	<p>ProDoc: Sec I; Part II; Activity 2.2 (Para 82); Activity 4.4</p>

Comments & Responses	Reference
<p>appliances and equipment are traded freely between Asian countries, the project proponents have incorporated in the project supplementary activities that will later expand the harmonization effort initiated by BRESL. These activities will be led by China (also funded out of China's contribution to BRESL) and will be carried out at the regional level. These will involve the participation of other BRESL countries, as well as other Asian countries that will be invited to participate in the regional harmonization efforts. Actually, some of the originally proposed 12 countries have expressed interest in participating, on their own, in some of the regional activities of BRESL. These supplementary activities include:</p> <ol style="list-style-type: none"> <li>1. Initial work on the development of proposed Harmonized Test Protocols, Certification, Accreditation and Compliance Regimes for 6 BRESL products (Activity 2.2)</li> <li>2. Regional ES&amp;L Harmonization Initiative - consists of specific tasks aimed at laying the groundwork for the facilitation of the planned regional ES&amp;L harmonization starting with test procedures, and later on standards &amp; labels (Activity 4.4).</li> <li>3. Regional harmonization promotion, which will involved sub-activities such as: (1) Establishment of a Regional ES&amp;L Harmonization Facility, which will serve as the main service platform for BRESL countries, and possibly other Asian countries in their individual and collective ES&amp;L efforts; (2) Regional training workshops/programs in selected ES&amp;L testing facilities on the development and implementation ES&amp;L programs and testing protocols for the 6 BRESL products; and, (3) Piloting of developed harmonized ES&amp;L test procedures and the application of ES&amp;L tools. This is where the participation of other Asian countries in the BRESL's regional harmonization scheme will be ensured (Activity 5.5).</li> </ol>	<p>(Para 101), Activity 5.5 (Para 114).</p> <p>See also Paras 84, 86, 87, 95, 97, 99, 100, 101, 102, and 103</p>
<p><b>Comment:</b> Energy savings and CO2 estimation: Annex C provides assumptions for baseline and alternative scenarios; it needs to include data on the sale volumes of each product in each country for the baseline scenario. How robust are the sales increase assumption (5%p.a. for all products)? What are the past trends?</p> <p><b>Response:</b> Annex C shows the volume of stock and sales of each BRESL product in 2004. Only the products that each BRESL country will work on under this regional project are shown. These data were used as baseline in estimating the anticipated energy consumptions and CO2 emissions under a business-as-usual scenario. These were also used in estimating the potential energy savings and corresponding CO2 emission reductions from the utilization of the improved and energy efficient versions of the 6 BRESL products under the alternative scenario, which the BRESL project aims to achieve.</p> <p>Annex E presents extracts from selected appliance market reports (Global Information, Inc., 2006) in the Asian region, particularly China and South Korea. According to these market reports, sales of domestic electrical appliances in South Korea in 2005 grew at a rate of 5%-8%. The same growth rate is expected to continue in the following years. The total white goods market in China grew by 61.81% between 1999 and 2005. This market is still expanding by about 8.21% per annum and is expected to continue until 2010. In terms of refrigeration equipment demand, it is reported that demand in the Asia/Pacific region will outpace the global average, rising nearly 6% annually through 2010. Based on the foregoing information, and the data gathered during the BRESL</p>	<p>ProDoc : Sec IV ; Annex C (Table 28)</p> <p>ProDoc: Sec IV; Annex E.</p>



Comments & Responses	Reference
<p>Survey regarding the growth expectations in the appliance market in the Asian countries, a modest average estimate of 5% annual growth rate for each of the 6 identified BRESL products in all BRESL countries was considered. This 5% across the board average annual growth rate was used as basis for forecasting market volume projections for, and the associated energy savings and CO2 emission reductions from the use of, the 6 EE products covered under the BRESL project.</p> <p>Moreover, the estimated 5% sales increases for the BRESL products is conservative, as the consumer appliances and equipment tend to increase at slightly higher rates as people purchase new appliances as their incomes rise. They vary by country, but typical historical rates of sales increase can be on the order of 5 to 15%, or even higher in some cases. In the likely case that sales volumes increase at a higher annual rate than 5%, the actual savings from BRESL will be even higher. In the unlikely event that sales volumes for the covered products increase at an average annual rate of less than 5%, the actual savings achieved from BRESL would be slightly lower.</p>	
<p><b>Comment:</b> It is difficult (in fact impossible without more detailed information) to understand/verify the data in Annex D. Please indicate at least which products are included for which country.</p> <p><b>Response:</b> Annex C shows the volume of stock and sales of each BRESL product in 2004. These data were used as baseline in estimating the anticipated energy consumptions and CO2 emissions under a business-as-usual scenario, and in estimating the potential energy savings and corresponding CO2 emission reductions from the utilization of the improved and energy efficient versions of the 6 BRESL products under the alternative scenario, which the BRESL project aims to achieve.</p> <p>The CO2 emission reductions for each country are based on the EE products that each country has expressed and agreed to work on under the BRESL project. The countries participating in the various BRESL products are as follows:</p> <ul style="list-style-type: none"> <li>• Refrigerators: Indonesia, Korea, Thailand, Vietnam</li> <li>• Room air conditioners: Bangladesh, China, Indonesia, Korea, Thailand, Vietnam</li> <li>• Electric motors: Bangladesh, Indonesia, Korea, Thailand, Vietnam</li> <li>• Ballasts for FTLs: Bangladesh, China, Indonesia, Thailand, Vietnam</li> <li>• Electric fans: Bangladesh, China, Indonesia, Thailand, Vietnam</li> <li>• CFLs: Bangladesh, China, Indonesia, Korea, Thailand, Vietnam</li> <li>• Rice cookers: Bangladesh, Indonesia, Korea</li> </ul>	<p>ProDoc: Sec IV; Annex C (Table 28)</p> <p>ProDoc: Sec I; Part II, Table 8</p>
<p><b>Comment:</b> Component 1 (along with component 2) focuses on policy and regulations. It is well known that the key to effective policies and regulations rests with enforcement. The proposed activities are somewhat vague and inadequate in addressing enforcement issues. Please elaborate. In this context, explain "The MEPS lead to an immediate reduction in energy use of 4 to 30%, depending on the product."</p> <p><b>Response:</b> Component 1 focuses on establishing the legal and regulatory foundation for ES&amp;L,</p>	<p>ProDoc: Sec I;</p>



Comments & Responses	Reference
<p>much larger increase in efficiency.</p> <p>The proposed specific activities that are intended to facilitate the enforcement of ES&amp;L laws, rules and regulations such as MEPS will ensure the realization of the estimated level of energy savings attributable to strict compliance. (Activities 1.1 &amp; 1.2)</p>	
<p><b><u>Comment:</u></b> The key rationale behind a regional project is to achieve regional harmonization. It is difficult to see how this can be achieved through this project. Even the regional cooperation component does not touch on this. Only activity 5.4 mentions this (under China). What's the amount of resources (GEF and other) will go to this?</p> <p><b><u>Response:</u></b> Regional harmonization will result from regional cooperation and build up of mutual trust between the participating countries and organizations. While harmonization is intended from the onset of the project, such harmonization will only materialize, when the participating countries have set-up comparable ES&amp;L systems. It is important to take note of the fact that the project intends to harmonize national regulative, standards setting and compliance regimes. Individual countries technical specification, particularly Minimum Performance Standards will still respond to the local market demand. There is however scope of harmonizing test procedures and the technical specifications for High Energy Performance Standards. These are mostly addressed in Component 4 which is comprised of activities that will aid individual countries with development and implementation of their ES&amp;L programs and that will take important steps towards regional harmonization of standards and labels.</p> <p>In the response to an earlier comment on regional harmonization (see above previous comment), it was mentioned that there are several activities in Components 2, 4 and 5 that addresses the regional harmonization objectives of the BRESL Project. These are described in the revised ProDoc.</p> <p>Activity 2.2:</p> <ul style="list-style-type: none"> <li>• Development of a body of common information and approaches each country can use to set standards and labels, making adoption easier in individual countries and also bringing a degree of harmonization to standards and labels in the region.</li> <li>• China and Indonesia will carry out initial work on the development of proposed Harmonized Test Protocols, Certification, Accreditation and Compliance Regimes for 6 BRESL products.</li> </ul> <p>Activity 2.3</p> <ul style="list-style-type: none"> <li>• Evaluation of opportunities to use test facilities in one country to help serve testing needs in other countries</li> <li>• Initial work to harmonize test procedures and establish mutual-recognition agreements and posting of certification data.</li> </ul> <p>Activity 2.4</p> <ul style="list-style-type: none"> <li>• TA on the development of a simple model data collection and reporting procedures, based on successful efforts in the region. This activity will be in line with the data banking requirements needed to support the regional harmonization efforts.</li> </ul> <p>Activity 4.1</p> <ul style="list-style-type: none"> <li>• Development of a project web portal to accommodate, among others, information intake and dissemination related to the harmonization work that will be carried out.</li> </ul>	<p>ProDoc: Sec I; Part II</p> <p>Paras 82-83</p> <p>Paras 84-85</p> <p>Paras 86-87</p> <p>Para 95</p>

Comments & Responses	Reference
<p>Activity 4.2</p> <ul style="list-style-type: none"> <li>• Preparation of a series of “lessons learned” reports on ES&amp;L issues in each country, which include those relating to work done in-country and collectively in the region on the harmonization efforts.</li> <li>• Analysis of ES&amp;L harmonization efforts in each country, the results of which will be used in aligning or if necessary, redirecting the collective efforts to achieve the regional ES&amp;L harmonization objectives.</li> </ul>	<p>Para 97</p>
<p>Activity 4.3</p> <ul style="list-style-type: none"> <li>• Development of a regional ES&amp;L Network to, among others, facilitate more information uptake that will be useful in guiding the collective work for on ES&amp;L harmonization, starting with the test procedures.</li> <li>• Regional ES&amp;L Information Sharing Network – to facilitate the gathering and consolidation of information to be uploaded in the project web site, e.g., conference announcements and papers, journal articles, media communications, success stories, best practices, etc.</li> </ul>	<p>Paras 99-100</p>
<p>Activity 4.4</p> <ul style="list-style-type: none"> <li>• Regional ES&amp;L Harmonization Initiative - This major activity consists of specific tasks aimed at laying the groundwork for the facilitation of the planned regional ES&amp;L harmonization starting with test procedures, and later on standards &amp; labels.</li> </ul>	<p>Paras 101-102</p>
<p>Activity 4.5</p> <ul style="list-style-type: none"> <li>• Sustainable Follow-up Plan – This are for activities that will be carried out to ensure key regional activities and frameworks that were established under BRESL can continue.</li> </ul>	<p>Para 103</p>
<p>Activity 5.5:</p> <ul style="list-style-type: none"> <li>• Regional Harmonization Promotion (China) – Includes (1) Establishment of a Regional ES&amp;L Harmonization Facility; (2) Regional training workshops/programs in selected ES&amp;L testing facilities on the development and implementation ES&amp;L programs and testing protocols for the 6 BRESL products; and, (3) Piloting of developed harmonized ES&amp;L test procedures and the application of ES&amp;L tools.</li> </ul>	<p>Para 112</p>
<p><b>Comment:</b> For management arrangement, China's NDRC is the executing agency and CSC "Designated Implementing Agency." However, on the cover page, "None" is given.</p> <p><b>Response:</b> China's NDRC is the executing agency and CSC is the designated implementing agency, on behalf of NDRC. These information have already been reflected at the front cover of the Executive Summary</p>	<p>Executive Summary, p. 1</p>
<b>Monitoring &amp; Evaluation</b>	
<p><b>Comment:</b> What is the baseline for the 6 products in each of the participating countries? What is the market share of efficient projects? Without baseline information, the target of increasing market share of efficient products by 25% in yr 5 relative to baseline is not very meaningful (same is true of the specific targets under component 1).</p> <p><b>Response:</b> Reliable data on EE product market shares are currently not available. Most of the data available are just estimates. This was also the finding from the BRESL Survey. The 25% increase is based on the opinion given by stakeholders and people who were consulted during the BRESL Survey, and to some extent based also on the 5% per</p>	<p>ProDoc: Sec I, Part II; Para 88; Sec IV, Annex E</p>

Comments & Responses	Reference
<p>annum assumption that was used in estimating the potential energy savings (and CO2 emissions reduction) that can be attributed from the utilization of EE products. This was taken as the basis for the activities that will be carried out under the project, i.e., to come up with the relevant interventions that can influence and/or bring about improvement in the use of EE products in the BRESL countries. Activity 2.4, which is intended for strengthening the data collection and reporting procedures on equipment availability and sales in the BRESL countries, will set the baseline the realistic market share of EE products in each BRESL country.</p>	
<p><b>Comment:</b> Overall the indicators and targets are quite good. A few seem inadequate or not so meaningful, e.g., 5 manufacturers develop new efficient products: What does this mean relative to the size of the market and thousands of manufacturers? Percentage of manufacturers involved in project who agree that ES&amp;L can provide opportunities to increase profitability: so what?</p> <p><b>Response:</b> Bulk of the expected energy savings that will result in the utilization of EE products (at least the 6 BRESL products) is derived from replications of what will be achieved in the project. Among the tangible outcomes of the project is manifested by the local manufacturers that will develop and manufacture EE products. The number of manufacturers mentioned as indicator corresponds to the number of manufacturers that the project will directly worked with. It's an output indicator – showing the direct output of a specific activity carried out under BRESL. This has been revised to show 60, which is based on at least 10 manufacturers per country, i.e., 2 to 3 per BRESL product covered in each country.</p> <p>Regarding the indicator <i>Percentage of manufacturers involved in project who agree that ES&amp;L can provide opportunities to increase profitability</i> - this is to present the impact of the advocacy work that will be carried out to encourage local manufacturers to venture in or invest in the manufacture and sale of EE products. This has been revised to read <i>Percentage of manufacturers that plan to locally produce EE products</i>.</p>	<p>ProDoc: Sec IV, Part V, Table 23 Sec I; Part II, Para 92</p>
<b>Financing</b>	
<p><b>Comment:</b> GEF: 6m; Govts: 23.65m; EF: 0.75m; ICA: 2.9m; CFL Harmo Initiative: 0.2m; CLASP: 0.16m; Total: 6+27.66m. Specify cash vs. in-kind from each co-financing source.</p> <p><b>Response:</b> The total budget has been revised to US\$ 6.8M, reflecting the additional US\$ 0.8 M contribution of Indonesia to BRESL from their GEF-4 CC allocation. All other funds remain the same.</p> <p>Table 4d in the Executive Summary and Table 12C in the ProDoc have been revised to clearly state how much is cash and how much is in-kind from each co-financing source. However, for those co-financers that will confirm their commitments by the time BRESL is up for CEO approval, the cash &amp; in-kind amounts are still combined.</p>	<p>Executive Summary: Page 1; Table 4d; ProDoc: Sec II, Part I, Table 13C</p>
<p><b>Comment:</b> According to the letter from CLASP, the co-financing amount is 5k, not 160k. The latter figure is what was spent last year by CLASP.</p>	

Comments & Responses	Reference
<p><b>Response:</b> This mistake is already rectified in the BRESL ProDoc and Executive Summary. CLASP is only committing US\$ 5,000 co-financing for BRESL. The US\$ 160,000 (or more) has been clarified to us as some sort of leverage co-financing. It's not included in the BRESL Financing Plan.</p>	ProDoc: Sec II, Part I, Para 33 & Table 13C
<p><b>Comment:</b> Is ICA in a position to commit \$2.9m cash to the project? Does the person who signed the letter have the legal authority to do so? (The letter was not even written on ICA stationary.)</p> <p><b>Response:</b> ICA has a 5-year program in the region, which involve mainly capacity building and technical assistance to manufacturers in the development of MEPS and labeling schemes for various products such as air conditioners, ballasts and motors. ICA agreed to subsume their program into BRESL. Such program The US\$ 2.9 M in-kind co-financing is their allocated budget for that program which starts this year. Mr. Zhou is ICA's Global Team Leader for Sustainable Electrical Energy, and as such is authorized to sign on behalf of his organization their US\$ 2.9 M cash co-financing for BRESL. Please see attached co-financing letter written on an ICA letterhead.</p>	ProDoc: Sec II; Part I; Para 30 ProDoc: Sec IV; Part A (separate attachment)
<p><b>Comment:</b> Co-financing is said to have been confirmed by the governments of Bangladesh and China. But there are no letters. Final co-financing letters from governments as well as other sources will be required for CEO endorsement.</p> <p><b>Response:</b> Some of the co-financing letters are already available, and will be provided soon. All of the co-financing letters will be available for submission to GEFSec when BRESL is already up for GEF CEO approval.</p>	ProDoc: Sec IV; Part A (separate attachment)
<p><b>Comment:</b> Some endorsement letters indicating participating countries' contribution to the project are missing: Thailand, Vietnam, and Indonesia (amount).</p> <p><b>Response:</b> The letters from the GEF OFPs of Thailand and Indonesia endorsing the BRESL Project are attached. Each letter indicates the amount of funds from each country's GEF-4 CC allocation that will be contributed to BRESL. The LOE from Vietnam will be sent by 23 April according to the country's GEF OFP.</p>	ProDoc: Sec IV; Part A (separate attachment)
<b>Responses to Reviews (Other IAs and RDBs)</b>	
<p><b>Comment:</b> Response is needed to comments by other agencies.</p> <p><b>Response:</b> Please find table below summarizing the responses to the comments of UNEP on the BRESL Project.</p>	

**Responses to UNEP Comments**

Comment & Response	Reference
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Comment & Response	Reference
<p><b>Comment:</b>            1) The rationale for a regional approach is unclear, particularly given the fact that not all the selected countries are at the same level on this field. Reasons given in terms of regional harmonization and facilitation of regional trade are too broad and vague and should have referred to a clear analysis of the regional market for each of the targeted equipment. The fact that not all the countries will have an action directed to all the selected equipment also contradicts this large approach encompassing six countries (note by the way, that South Korea is not indicated as a participating country in the front page of the Executive Summary).</p> <p><b>Response:</b>            Countries in the Asian region recognize that ES&amp;L programs can help realize significant energy saving potentials. Given the high amount of expertise that is necessary to develop and ES&amp;L program, Asian countries could benefit a great deal from a regional program that stresses capacity building and informational exchange on ES&amp;L. Such a program would allow for the rapid dissemination of best practices in the area of implementation models, financing, successful demonstration programs, and labeling.</p> <p>Product markets are not defined by political boundaries. Energy using appliances and equipment are traded freely between Asian countries. The development of individual standards and labeling programs without open dialog and cooperation on the establishment of testing procedures and label design could be ultimately be economically harmful to product manufacturers. For example, any effective regime for energy standards and labeling will have to include imported as well as locally produced products. The process of translating standards on imported products must account not only for different measurements but also for different philosophical underpinnings of testing design. This process is expensive, time consuming, and often inaccurate. Regional cooperation in the development of programs can eliminate this problem. Additionally the development of testing facilities, testing protocols, monitoring and compliance regimes across borders can bring down costs through scale. This would be highly beneficial, especially to countries with smaller product markets to which the costs of developing ES&amp;L programs are comparatively high.</p> <p>Scarce national program and budget resources for testing and certification can be shared via such a cooperation program (e.g., mutual recognition agreements) and need not to be built up in parallel within all participating countries. The building of such competence centers in all the participating countries will eventually lead to under utilization of such resources and hence strongly compromise such institutions sustainability.</p> <p>The basic rationale for a regional approach is that the project addresses traded products that are commonly traded and sold between the traded countries. As such, the current “each country is an island” strategy is not an appropriate way to deal with measuring and rating the energy performance of the traded products. The proposal recognizes that not all of the participating countries are at the same level of advancement, and actually takes advantage of this fact. The proposed program advocates a strong component of regional exchange and cooperation, fostering regional capacity building, experience exchange, built up of mutual trust for future harmonization and technical co-operation. Overall this approach shall lead to a reduction of market barriers in the region enabling economics of scale for manufacturers’ and finally more affordable pricing for energy efficient products.</p>	

Comment & Response	Reference
<p>The project also recognizes the diversity of the different countries, and therefore rather than propose a “one size fits all” strategy where all countries have to work together on all products, the countries will focus on products where they have the greatest need, or have experience to share with the other countries. This market oriented specialization will increase the efficiency of use of the GEF resources.</p> <p>The 6 BRESL products were identified by the project stakeholders based on the survey that was participated in by several Asian countries. These products are among the commonly traded appliances/equipment in the region. For example, the estimated saturation rates for refrigerators, air conditioners and rice cookers indicate that these are commonly used in many of the BRESL countries.</p> <p>Presently, ES&amp;L programs are developing at different rates and with different results across Asia. Without systemized regional cooperation, the programs will continue to develop in this manner without the gains of exchange of both technical and human capital. Without cooperation, facilitated also through south-south dialogs, progress of ES&amp;L programs will not only be slowed, but it will happen in such a way that it could potentially hinder trade once the programs are matured. Cooperation in the testing and marketing of each of the identified 6 BRESL products will yield the benefits of greater market transparency, reduced costs for M&amp;E and product testing, and enhanced prospects for trade and technology transfer.</p> <p>South Korea is part of the project as a provider of technical assistance, not as a GEF beneficiary. Since they have the most extensive, advanced, and successful standards and labeling program in the region, their in-kind contributions and participation in the project will be immensely valuable</p>	<p>ProDoc: Sec I; Part I; Para 41 (Table 4)</p>
<p><b>Comment:</b></p> <p>2) As indicated in the ProDoc, some of the countries are well advanced in developing EESL (China, South Korea, Thailand) and it is questionable they still need GEF support. These countries have already benefited from international programs developed by the IEA, the United Nations Foundation through CLASP, and others, including the GEF: there was already for instance, a UNDP led GEF project on refrigerators and lighting in China a few years ago; similarly, there was a GEF project on air conditioners in Thailand. Although the role of CLASP or other organizations is well mentioned, it is unclear how they will be involved or how this project will build on what has already been done.</p> <p><b>Response:</b></p> <p>Table 3 in the ProDoc summarizes the ongoing and planned cooperation efforts for regional initiatives on ES&amp;L. The projects include both GEF projects and a range of other donor-funded projects. While many of these initiatives are in-country efforts to develop standards for specific projects, none of the current or ongoing efforts takes the regional approach that BRESL will take to facilitate regional cooperation, harmonization, and actual implementation, of energy labeling and MEPS for a set of core energy-using appliances and products.</p> <p>Capacity built from the projects that were mentioned has facilitated the development and implementation, but at variance from each other, of ES&amp;L programs at the national</p>	<p>ProDoc: Sec I; Part I; Para 39 (Table 3)</p> <p>ProDoc: Paras: 43, 44, 46, 47,</p>



Comment & Response	Reference
<p>level. Despite the regional cooperation efforts that were done in the past, such national programs nearly entirely didn't provide the benefit of exchange of both technical and human capital with other countries in the region. The national activities that were identified for each country are meant to expand existing and planned ES&amp;L activities, and to remove barriers hindering the effective development and implementation of ES&amp;L programs. These are the incremental activities that will either: (1) improve the outputs and impacts of the existing and/or planned ES&amp;L activities; or, (2) facilitate the smooth and effective implementation of the existing and/or planned ES&amp;L initiatives. Paragraphs 43, 44, 46, 47 and 48 explains why each BRESL country need the incremental assistance from GEF for their expanded/improved ES&amp;L initiatives. In this project, South Korea is not requesting for GEF assistance. Rather, it will be providing technical assistance to the project.</p> <p>With regard to the advanced status of some of the countries – take the case of Thailand. The BRESL Survey revealed that Thailand is advanced only in energy labeling, and even its labeling programs are limited to the extent that they are not mandatory like the other countries. And unlike Korea and China, which have mandatory minimum energy performance standards (MEPS) for many products, Thailand as of December 2006 had passed only one MEPS for any product, air conditioners. Now, the Thai Government has made standards and labeling a priority and it is likely that Thailand will benefit greatly from the BRESL cooperation as it develops MEPS for several products during the five year BRESL project cycle.</p> <p>With regard to the previous GEF project related to air conditioners, there have been two GEF projects: one very successful project helped build capacity during the initial start-up of the Demand Side Management (DSM) Office of the Electricity Generating Authority of Thailand. This resulted in a successful energy labeling program covering refrigerators and split-system air conditioners. However, the labeling scheme is somewhat limited as it is not mandatory for all air conditioners. A second GEF project was focused on chiller replacements, and is not relevant to the types of split-system (i.e. residential and small commercial) air conditioners covered under the BRESL project.</p> <p>Here is how the BRESL build on previous ES&amp;L efforts in the region:</p> <ul style="list-style-type: none"> <li>• United Nations Foundation through CLASP – Capacity built in each country will most likely be utilized in the implementation of specific activities of BRESL</li> <li>• UNDP-GEF CFC-free Refrigerators Project – China will provide capacity building on ES&amp;L in refrigerators to the other BRESL countries (in line with the South-South cooperation theme).</li> <li>• UNDP-GEF Greenlights Project - China will provide capacity building on ES&amp;L in lighting products to the other BRESL countries (in line with the South-South cooperation theme). Along with the IFC/GEF ELI Project, experience from the Greenlights project will be used in the regional harmonization efforts for lighting products.</li> <li>• CLASP and other organizations – These are mostly active in ES&amp;L capacity building in the region, and will be providing in-kind technical assistance support for the ES&amp;L policymaking and regional cooperation programs of the BRESL project. Partnering with these organizations will broaden the reach and impact of the BRESL project. CLASP will support the project as a resource partner, providing intellectual and technical resources. Via this involvement of CLASP the project will</li> </ul>	48

Comment & Response	Reference
<p>naturally build on what has been implemented and achieved elsewhere where CLASP has worked.</p>	
<p><b>Comment:</b>  3) The relevance of including CFLs in the list of targeted products is questionable. Since China has almost the production monopoly of CFLs and a lot of work has been done already regarding the development of EESL in this area, one can wonder whether the topic should not be dealt with at international level, in order to harmonize the various existing standards. As far as the countries in the project are concerned, the issue becomes more how to introduce the CFL technology and phase out the incandescent lamps, which is a governmental issue.</p> <p><b>Response:</b>  The choice of EE products (i.e., BRESL products) was based on the project proponents and stakeholders. A survey was conducted to determine these, and a stakeholders' consultation meeting confirmed these choices. One of the selected products is CFL.</p> <p>It is true that China now produces approximately 90% of CFL sold globally. However, several countries such as India, Indonesia, and Vietnam are working to maintain and even expand their CFL production base in order to have more control over the energy-efficient lighting equipment sold in their countries. And China also recognizes its particular responsibility for ensuring CFL quality because its suppliers produce many of the best CFLs in the world, but also many of the worst, which do not meet quality standards. Therefore, Chinese government and industry have expressed strong interest to further and develop and harmonize standards, test protocols, and compliance regime to allow for a more enthusiastic CFL uptake on regional markets, which have in some cases been hampered by customers having negative experience with some under-performing CFLs.</p> <p>The harmonization of existing testing procedures and performance specifications for CFLs is currently being led by the International CFL Harmonization Initiative (CFLI). So far a revised Test Protocol – as indispensable component of CFL Performance Standard Harmonization – has been agreed upon and has been proposed to the IEC. However, there is no agreement on a common set of performance and quality specifications for CFLs, and this will not be undertaken by the IEC. At a recent CFLI stakeholder meeting in Xiamen, China during 2-3 April 2007, no common position could be found.</p> <p>In fact, the BRESL project is complementary to the CFLI, since the CFLI simply provides a regular venue (approximately twice a year) to discuss and agree on proposals for harmonizing test procedures, performance specifications, mutual recognition and certification, etc. But CFLI has no direct link to implementation in any country and cannot therefore by itself develop agreements that lead to in-country implementation. This is where BRESL can leverage the groundwork carried out by CFLI.</p> <p>Apart from this principal standardization issue, much work remains to be done to develop an adequate compliance regime to ensure that CFLs manufactured, traded, and sold in the region meet basic quality standards. In fact the current trend by governments to announce phase-outs of incandescent lamps makes the CFL component of BRESL even more relevant. The politicians, by supporting such bold declarations, now need to</p>	

Comment & Response	Reference
<p>ensure that the CFLs that are sold to replace the incandescent lamps meet basic standards for quality, performance, and energy efficiency. Therefore the BRESL project, by providing a mechanism for the participating countries to harmonize their CFL specifications will ensure that this progress further.</p>	
<p><b><u>Comment:</u></b>  4) The elaboration of standards and labels requires a strong partnership and sometimes lengthy and complicated negotiations with the manufacturers and/or local equipment suppliers and distributors. Although technical assistance directed to these stakeholders is indicated among the various activities, the TA content is not explicitly described and the support to these negotiations does not appear as a key objective. Surprisingly, manufacturers or equipment distributors do not even appear in the list of stakeholders.</p> <p><b><u>Response:</u></b>  We recognize this comment as a substantial contribution to our proposal. From the position of the project proponents stakeholders like manufacturers, equipment distributors and customers would be involved implicitly in the project on a regular and ongoing base via national standardization bodies, institutes, associations, and government departments etc., which as part of their regular work and project actions in their respective countries will discuss and consult with relevant stakeholders of their constituencies. This is already included in the Project Strategy, where capacity building, manufacturer support, pilot projects constitute a forum for interaction with these relevant stakeholders.</p> <p>However, responding to this comment, the project proponents wish to emphasize role and involvement of the stakeholders, which include the local manufacturers. Partnership will explicitly include cooperation with the relevant stakeholders and market actors in the project.</p> <p>Component 3 of BRESL specifically address the barrier that manufacturers are often distrustful of standards and labels, and their objections can delay ES&amp;L efforts or result in weakening of standards. While it is acknowledged that this manufacturer-related barrier is generic across the region, it must be dealt with in the context of each national economic and cultural setting. The activities under this project component are meant to get the interest and cooperation of local manufacturers to participate in ES&amp;L programs, and ultimately build their confidence in venturing in the manufacture of EE products. It is comprised of promotional/advocacy initiatives, provision of information to manufacturers on ways to improve product efficiency at modest cost; training on ways to use ES&amp;L programs to increase profitability; and technical assistance to individual local manufacturers on ES&amp;L issues, particularly compliance to set standards.</p> <p>Local manufacturers will be consulted and involved in during the standard and label development processes. Workshops will be organized for them to participate in the development and review of proposed standards, and will also discuss marketing strategies to use ES&amp;L efforts to “up sell” to higher value, higher profit products. To enhance their interest in the program, limited amount of technical assistance to selected manufacturers as identified by host countries will be provided, consisting of plant walkthroughs to evaluate the existing manufacturing operations and processes, meetings, and provision of technical recommendations on the upgrades.</p>	<p>ProDoc: Sec I; Part II; Paras 83-88</p> <p>ProDoc: Sec I, Part V; and Sec IV, Part II (Table 16)  ProDoc: Sec I; Part II; Paras 83-88</p>

Comment & Response	Reference
<p>While it is not mentioned in the proposal, getting the local manufacturers' cooperation and negotiating terms of the partnership with them, are very important "must do" activities. Obviously, these are the things that need to be done in establishing partnership with them in the implementation of the project activities that will involve them, such as the development of a voluntary agreement schemes.</p>	
<p><b>Comment:</b>  5) It is difficult to understand why there is a need for such a huge budget, essentially used for local or international consultants. The exact roles or terms of reference, staff weeks, skills and required qualifications of these consultants are not provided (although this is explicitly requested p.11 of the Executive Summary) which makes it difficult to judge the financing soundness of the project, which overall budget seems however overestimated.</p> <p><b>Response:</b>  The stakeholders from each BRESL country identified their national activities, and at the same time, provided inputs regarding the regional activities that will be carried out collectively by all countries under BRESL. Since they understand exactly what these activities are all about, and what sort of expertise and logistical requirements are needed, they are in the best position to estimate the number of personnel, level of expertise and staff-week that are required for each activity. The weekly rates that were used for each type of personnel required are more or less based on typical consultancy rates in their respective countries, and international rates used in other similar projects.</p> <p>Compared to many other GEF projects, and given the technical and geographic scope of the project, the budget does not appear to be excessive. The project aims to influence the development of standards and labeling regimes for six product types across six countries. The substantive technical work involved for each product involves a range of steps including assessment and improvements in the regulatory frameworks, assessment and harmonization of testing protocols, analysis and development of minimum energy performance standards (MEPS) and high energy performance standards (HEPS). This complex and comprehensive approach requires substantial consultancy input over a wide range of diverse issues. Hence, the budget - mainly to be utilized for international, regional and national consultants, regional experience exchange and pilot projects - reflects essentially the complexity of the project's scope and approach. The project partners believe the amount is justified by enabling the project delivering the proposed outputs in high quality and on-time.</p> <p>To support the assertion that the BRESL budget is not excessive, one can compare it to some other related GEF-funded projects. By contrast, the GEF support for the WB Thailand DSM effort during the late 1990s covered just six products in a single country, and the total GEF funding was US\$ 15.5 million. And GEF support for the IFC Efficient Lighting Initiative (ELI) only covered one end use (lighting) across seven countries.</p> <p>As to the financial soundness of the project, the combined national and regional approach to addressing the barriers to the development and implementation of ES&amp;L programs in the region proves to be more cost-effective compared to an individual country approach. Considering the projected CO2 emissions reduction that will result directly and indirectly from BRESL, the estimated unit abatement cost is about US\$ 0.17/ton CO2. This corresponds only to the direct CO2 emission reductions during the 5</p>	<p>ProDoc: Sec IV; Part III</p>

Comment & Response	Reference
<p>year project duration (i.e., 2007-2011).</p> <p>Please note that, as per usual GEF procedures, clearly defined TORs for each major key project players will be provided by the time the BRESL ProDoc is already up for CEO approval.</p>	

**GEF COUNCIL COMMENTS (JULY 2007)**

Comment & Response	Reference
<b>FRANCE</b>	
<p><b>Comment:</b> Opinion favorable: the approach is original and should be encouraged</p> <p><b>Response:</b> Agree</p>	
<b>JAPAN</b>	
<p><b>Comment:</b> Labeling schemes should be consistent with the existing voluntary labels and International Energy Star Program (U.S.A. and Japan). We would like to have confirmation this project will not lead to an exclusion of such existing Environmental Labeling Systems including labels for energy-efficiency.</p> <p><b>Response:</b> The project will consider all existing standards and labels program that are applicable in the BRESL countries. For example North American, European, Japanese, Korean, Taiwanese, Australian, etc. will be evaluated by the technical working groups that will be organized and tasked in developing technical standards for the 6 equipment/appliances that will be covered under BRESL. The technical capacity building activities will also rely on training programs designed by CLASP, which cover all relevant ES&amp;L standards and procedures in the region.</p>	<p>ProDoc: Activities 1.2 &amp; 2.1 &amp; Activities 4.2 &amp; 4.3</p>
<p><b>Comment:</b> In some countries, Environmental Divisions have fairly well developed labeling programs of their own. Therefore, such knowledge should be shared within the government to take advantage their expertise.</p> <p><b>Response:</b> Agree. These will also be covered, such those in the Philippines and Thailand. The regional harmonization activities of the project will cover this. Specifically Activity 5.5, which is on the conduct of regional training workshops/programs in selected ES&amp;L testing facilities on the development and implementation ES&amp;L programs and testing protocols for the 6 BRESL products, will not only ensure this, but also make sure the participation of other Asian countries in the BRESL's regional harmonization scheme.</p>	<p>ProDoc: Component 4 and Activity 5.5.</p>

**ANNEX C: CONSULTANTS TO BE HIRED FOR THE PROJECT**

<i>Position Titles</i>	<i>US\$ per Person- wk</i>	<i>Estimated person- wks</i>	<i>Tasks to be performed</i>
<b>For Project Management</b>			
<b>Local Personnel</b>			
PMU Director	500	222	Responsible for the day-to-day implementation of the project activities and on the integration of parallel co-financing initiatives; responsible for all substantive, managerial and financial reports from the project.
Project Officer	300	217	Coordinate with and monitor activities planned and conducted by country teams, as well as regional activities.
Admin & Finance Officer	125	200	Responsible for all the administrative, secretarial and financial matters of the BRESL, the project's record keeping systems, meetings and travel arrangements and the processing and reporting of all project incomes and expenditures.
<b>Local Consultants</b>			
Financial Auditor	1000	25	Conduct annual financial audit of the project
Contract Management Expert (CICETB)	1000	78	Provision of management services such as in the purchase of the service of foreign-based consultants or equipment, bidding, contract management, payment, audit, etc
<b>International Consultants</b>			
Chief Technical Advisor	2,500	108	Provision of technical and management advice in the project implementation, coordination with regional partners/stakeholders, preparation of the project monitoring & evaluation plan.
Project Evaluator (Mid-Term Review)	2,500	10	Lead and carry out the mid-term evaluation of the project following the monitoring and evaluation procedures established by UNDP and GEF; provide recommendations for any necessary adjustments on the project and in the effective implementation of the project activities.
Project Evaluator (Final Evaluation)	2,500	10	Lead and carry out the final evaluation of the project following the monitoring and evaluation procedures established by UNDP and GEF; provide recommendations for follow up activities.
<b>For Technical Assistance</b>			
<b>Local Consultants</b>			
ES&L Policy Experts (Activity 1.1 – All Countries)	550	200	Conduct of ES&L policy and feasibility studies; Provide guidance on local policies and legislative/regulatory frameworks relevant to ES&L
ES&L Policy Expert (Activity 1.1 – Thailand)	550	33	Preparation of recommended policy paper on national integrated ES&L policy model; Design of a mandatory ES&L program including IRRs.
ES&L Training Expert (Activity 1.1 – Indonesia)	550	33	Training of national and local government authorities on policy formulation and impact analysis of ES&L schemes, planning, implementation and evaluation of ES&L programs
EE Product Manufacturing Expert (Activity 1.1 –	550	33	Design and implementation of incentives for EE product importers and manufacturers

<i>Position Titles</i>	<i>US\$ per Person- wk</i>	<i>Estimated person- wks</i>	<i>Tasks to be performed</i>
Indonesia)			
ES&L Program Implementation Experts (Activity 1.2 – All countries)	550	807	Provision of technical advice on ES&L policy implementation plans; Preparation of implementation plan for specific actions for ensuring strict and proper enforcement of ES&L policies and legislations; Implementation plans for pilot schemes for feasible ES&L program enforcement measures
ES&L Training Expert (Activity 1.2 – Pakistan)	550	135	Conduct of training program for policy makers and stakeholders at the central and provincial level in the area of ES&L policy formulation, program development and implementation, including regional trading of EE equipment/appliances.
ES&L Training Expert (Activity 1.2 – Indonesia)	550	135	Conduct of capacity development program covering specific aspects of ES&L: (1) Updating of existing ES&L programs including the formulation of IRRs; (2) Enhancement of ES&L work done on the 6 BRESL products; (3) Development of an accreditation program for appliance testing laboratories in existing factories; and, (4) Tool development such as impact assessment methodology, data survey protocols, and program evaluation protocol.
ES&L Training Expert (Activity 2.1 – All Countries)	550	54	Conduct of detailed gap analysis and capacity need assessment on ES&L development, implementation and enforcement; Design and organize a study tour on ES&L program development & implementation and methods of its dissemination/adoption.
EE Appliance Expert (Activity 2.2 – China)	550	43	Gathering of data and conduct of tests for the development of new set of standards for rice cookers; (1) Conduct of research on opportunities and costs for improving the efficiency of rice cookers; (2) Development of a new standard and endorsement label for rice cookers; (3) Publication of report on the rice cooker standards for dissemination to other countries.
ES&L Testing Experts (Activity 2.3 – All Countries)	550	238	Conduct of survey on testing and certification facilities and programs in the region, identification of gaps, and development and implementation of a plan to fill these gaps; Provision of technical guidance in the implementation of feasible capital improvements on ES&L testing facilities.
ES&L Market Expert (Activity 2.3 – China)	550	40	Advice and assist in the implementation of a market monitoring system for ES&L (sampling and testing) for compliance with standards and accuracy of labels
ES&L Program Expert (Activity 2.3 – Indonesia)	550	40	Advice and assist in the implementation of capacity building on testing capabilities, and the development of standards and labels for other major appliances/equipment
ES&L Model Experts (Activity 2.4 – All Countries)	550	359	Assist in the evaluation of the applicability of the model data collection and reporting procedures; Advice on the utilization of model data collection

<i>Position Titles</i>	<i>US\$ per Person- wk</i>	<i>Estimated person- wks</i>	<i>Tasks to be performed</i>
			and reporting procedures.
EE Products Marketing Experts (Activity 2.4 – All Countries)	550	82	Provision of TA to EE appliance/equipment manufacturers and distributors on the data reporting process for the market monitoring scheme.
Market Research Experts (Activity 2.4 – All Countries)	550	218	Conduct of market surveys in each BRESL country of EE appliance/equipment sellers, traders and users in Year 2 and Year 5 (18 weeks/country/year)
EE Products Marketing Experts (Activity 3.2 – All Countries)	550	32	Data gathering on current (if any) ongoing and/or planned advocacy campaigns on ES&L, from manufacturers, retailers and consumers; Assist in the analysis of the feasibility of ES&L program implementation (national and private sector perspectives); Assist in the analysis of potential financial benefits to manufacturers and retailers of an effectively enforced ES&L program; Assist in the analysis of potential market strategies to use ES&L efforts to “up sell” to higher value, higher profit products
Energy Economist (Activity 3.2 – Pakistan)	550	5	Assist in the analysis of the impacts of high oil prices on the pricing of energy efficient equipment/appliances
EE Product Manufacturing Experts (Activity 3.3 – All Countries)	550	107	Evaluation and selection of local manufacturers of each BRESL product that will be provided technical services under the project; Conduct of plant walkthroughs to evaluate the existing manufacturing operations and processes
Project Financing Expert (Activity 3.3 – Bangladesh)	550	18	Implementation of a capacity development program for financial institutions on financing ES&L and EE product manufacturing projects
Energy Management Experts (Activity 3.3 – China, Indonesia)	550	36	Implementation of voluntary agreement scheme with selected local appliance/equipment manufacturers
Project Financing Experts (Activity 3.3 – China, Indonesia)	550	36	Conduct of negotiations with local financing institutions on financing arrangements for energy efficient equipment/appliance suppliers (importers and manufacturers)
IT Experts (Activity 4.1 – All Countries)	550	82	Design of web-site linked to the APEC-ESIS website; Conduct of training for country officials and experts on how to place updates on their national programs directly into the APEC-ESIS web site; Evaluation of the impacts of the project website
IT Expert (Activity 4.3 – Indonesia)	550	90	Design of a regional ES&L information sharing network; Design of national ES&L information system; Technical advice on the utilization and maintenance of the national data system
ES&L Program Experts (Activity 4.4 – All Countries)	550	55	Assist international/regional experts in the design and implementation of regional ES&L harmonization activities in each country
Energy Planning Experts (Activity 4.5 – All Countries)	550	37	Provision of support to ES&L Program Experts in the design of the follow-up program; Coordination and facilitation of the agreement on, and approval of, the follow-up plan



<i>Position Titles</i>	<i>US\$ per Person- wk</i>	<i>Estimated person- wks</i>	<i>Tasks to be performed</i>
ES&L Program Experts (Activity 5.1 – Bangladesh, Thailand, Vietnam)	550	163	Review of the Lessons Learned report and conduct of a national seminar to present the findings and recommendations; Facilitation of the mandating of the procurement of only high-efficiency equipment; Technical advice in the piloting of appropriate mass purchasing agreements for a selected EE product in 3 private establishments
Market Research Experts (Activity 5.2 – Bangladesh, China)	550	54	Conduct of a survey on consumer information needs related to energy-efficient products; Collection of necessary information on 2 identified pilot BRESL products from local manufacturers.
IT Experts (Activity 5.2 – Bangladesh, China)	550	54	Development of a web-based national database system that will include core ES&L information
EE Promotion Experts (Activity 5.3 – Bangladesh, Indonesia, Pakistan)	550	167	Implementation of the national awareness campaign to remove market barriers for the energy efficient appliances in general; and specific appliances in each country, in particular.
EE Financing Experts (Activity 5.4 – Indonesia)	550	43	Implementation of consumer financing schemes for the purchase of EE equipment/appliances that comply with MEPS; Training of consumers on negotiating financing arrangements with EE equipment/appliance suppliers; Facilitation of the establishment of financing schemes for projects in the commercial and industrial sectors that employ equipment/appliances in compliance with the ES&L program; Conduct of workshops to: (1) present the financial schemes; and, (2) present the results and impacts of the implemented financial assistance schemes.
ES&L Program Experts (Activity 5.5 – China)	550	218	Assist in the conduct of study on the establishment of a Regional ES&L Harmonization Facility; Assist in the conduct of regional training workshops/programs in selected ES&L testing facilities on the development and implementation ES&L programs and testing protocols for the 6 BRESL products; Implementation of pilots of developed harmonized ES&L test procedures and the application of ES&L tools.
<b>International Consultants</b>			
ES&L Policy Experts (Activity 1.1 – All Countries)	1,785	51	Provision of technical advice on ES&L policies and legislations, development of draft ES&L legislation, rules & regulations
ES&L Policy Expert (Activity 1.1 – Thailand)	1,785	8	Conduct of international review of ES&L policies and legislations; technical advice on integrated ES&L policy models and design of mandatory ES&L programs and IRRs
ES&L Training Expert (Activity 1.1 – Indonesia)	1,785	8	Conduct of training courses and on-the-job training for national and local government authorities on policy formulation and impact analysis of ES&L schemes, planning, implementation and evaluation of ES&L programs
EE Product Manufacturing Expert (Activity 1.1 –	1,785	8	Provision of technical advice on the design and implementation of incentives for EE product

<i>Position Titles</i>	<i>US\$ per Person- wk</i>	<i>Estimated person- wks</i>	<i>Tasks to be performed</i>
Indonesia)			importers and manufacturers
ES&L Program Implementation Experts (Activity 1.2 – All Countries)	1,785	78	Provision of technical advice on the adoption, planning and implementation of appropriate ES&Ls for the 6 BRESL products; recommendations on the specific actions for ensuring strict and proper enforcement of ES&L policies & legislations; Design of pilot schemes for feasible ES&L program enforcement measures
ES&L Training Expert (Activity 1.2 – Pakistan)	1,785	13	Assessment of capacity needs and design of training program for policy makers and stakeholders at the central and provincial level in the area of ES&L policy formulation, program development and implementation, including regional trading of EE equipment/appliances.
ES&L Training Expert (Activity 1.2 – Indonesia)	1,785	13	Assessment of capacity needs and design of capacity development program covering specific aspects of ES&L: (1) Updating of existing ES&L programs including the formulation of IRRs; (2) Enhancement of ES&L work done on the 6 BRESL products; (3) Development of an accreditation program for appliance testing laboratories in existing factories; and, (4) Tool development such as impact assessment methodology, data survey protocols, and program evaluation protocol.
ES&L Training Experts (Activity 2.1 – All Countries)	1,785	20	Review and verification of capacity needs of BRESL countries on ES&L development, implementation & enforcement; Design of training materials based on capacity needs assessment; Organization and conduct of training courses; Evaluation of the impacts of the training courses
EE Appliance Expert (Rice Cooker) (Activity 2.2 – China)	1,785	27	Development of new set of standards for rice cookers based on research data on opportunities and costs for improving the efficiency of rice cookers; and, (2) Development of a new standard and endorsement label for rice cookers
Appliance/Equipment Testing & Certification Experts (Activity 2.2 – China, Indonesia)	1,785	53	Preparation of Harmonized Test Protocols, Certification, Accreditation and Compliance Regimes for 6 BRESL products
Appliance/Equipment Standards and Testing Experts (Activity 2.2 – All Countries)	1,785	159	Development of model test procedures, standards and labeling programs for each product; Facilitate regional consultation meetings on the outputs of the TWGs
ES&L Testing Experts (Activity 2.3 – All Countries)	1,785	44	Review of existing ES&L technical capacity and capacity needs for appliance/equipment testing; Evaluation of opportunities for utilization of test facilities by other countries; Evaluation of the legal, logistical and technical requirements for the implementation of future harmonized test procedures; compliance to established mutual-recognition agreements and posting of certification

<i>Position Titles</i>	<i>US\$ per Person- wk</i>	<i>Estimated person- wks</i>	<i>Tasks to be performed</i>
			data.
ES&L Market Expert (Activity 2.3 – China)	1,785	7	Development and implementation of a market monitoring system for ES&L that involves sampling random products and testing for compliance with standards and accuracy of labels
ES&L Expert (Activity 2.3 – Indonesia)	1,785	7	Development of testing capabilities, and the development of standards and labels for other major appliances/equipment
ES&L Testing Experts (Activity 2.3 – All Countries)	1,785	44	Conduct of round robin testing; Provision of technical assistance in the design of capital improvements on ES&L testing facilities, based on the findings and recommendations of the round-robin testing and in-country ES&L technical capacity assessments; Documentation and dissemination of the results and recommendations of the round robin testing.
ES&L Model Experts (Activity 2.4 – All Countries)	1,785	16	Technical advice on the evaluation of the applicability of the model data collection and reporting procedures; Recommend model data collection and reporting procedures suited to the data requirements and protocols, data availability, as well as the planned/established harmonization requirements in the country
ES&L Model Experts (Activity 2.4 – All Countries)	1,785	16	Design and development of the model data collection and reporting procedures; Provision of technical assistance in the use of, the model data collection and reporting procedures; Facilitate in regional meetings on data reporting procedures; Recommend adjustments on the regional data reporting procedures
EE Product Manufacturing Experts (Activity 3.1 – All Countries)	1,785	112	Advice on the assessment of existing designs and production processes, and opportunities for improvements; Preparation of reports on the product energy efficiency performance of products evaluated including recommendations for improving product efficiency
EE Products Marketing Experts (Activity 3.2 – All Countries)	1,785	10	Evaluation of current (if any) ongoing and/or planned advocacy campaigns on ES&L, from manufacturers, retailers and consumers; Evaluation of the feasibility of ES&L program implementation (national and private sector perspectives); Evaluation of potential financial benefits to manufacturers and retailers of an effectively enforced ES&L program; Evaluation of potential market strategies to use ES&L efforts to “up sell” to higher value, higher profit products
Energy Economist (Activity 3.2 – Pakistan)	1,785	2	Conduct of special study on impacts of high oil prices on the pricing of energy efficient equipment/appliances
ES&L Marketing & Promotion Experts (Activity 3.2 – All Countries)	1,785	10	Design, organization, implementation and evaluation of ES&L promotional programs
EE Product Manufacturing	1,785	22	Technical advice on the evaluation of existing

<i>Position Titles</i>	<i>US\$ per Person- wk</i>	<i>Estimated person- wks</i>	<i>Tasks to be performed</i>
Experts (Activity 3.3 – All Countries)			manufacturing operations and processes, and provision of TA/recommendations on: (1) the processes and equipment needed to improve and upgrade appliance/equipment design and production technologies; (2) Preparation of business plans and project proposals for financing; and, (3) Linking with funding institutions, banks and other financial intermediaries for sourcing of funds for facility and production improvements to accommodate energy efficient product manufacturing
Project Financing Expert (Activity 3.3 – Bangladesh)	1,785	4	Design of a capacity development program for financial institutions on financing ES&L and EE product manufacturing projects
Energy Management Experts (Activity 3.3 – China, Indonesia)	1,785	7	Development of a voluntary agreement scheme. Technical advice in the VA Scheme implementation and evaluation
Project Financing Experts (Activity 3.3 – China, Indonesia)	1,785	7	Technical advice in negotiating financing arrangements for energy efficient equipment/appliance suppliers (importers and manufacturers)
EE Program Evaluators (Activity 4.2 – All Countries)	1,785	34	Conduct of interviews with program administrators in the region; Preparation of the “lessons learned” reports; Analysis of each country’s overall perceptions or views, work completed and planned, and expectations for the regional harmonization efforts
Information Technology Experts (Activity 4.3 – All Countries)	1,785	6	Design new features to enhance the APEC’s REESLN; Conduct of training workshop on the REESLN operations, in particular on the sharing of ES&L experience under the numerous GEF-assisted ES&L programs in the various geographic regions.
ES&L Program Experts (Activity 4.4 – All Countries)	1,785	64	Design/development of policies, implementing rules and regulations related to the harmonization and mutual recognition of ES&L test protocols; Evaluation of the impacts of the implementation of ES&L programs at the national and regional levels; Development of a regional energy efficient equipment and appliance market monitoring program; Development of a promotion program for worldwide recognition of regionally produced ES&L program-compliant equipment/appliances; Development of methodology and tool developments; Design of pilot programs for the application of harmonized Test Procedures, Certification, Accreditation Implementation, and ES&L Tools; Design of a pilot program for a regional energy benchmarking system; Conduct of regional workshops on collaborative harmonization initiatives
ES&L Program Experts (Activity 4.5 – All Countries)	1,785	22	Stocktaking of the interventions that were carried out and outputs delivered; Setting up of revised targets to be accomplished in the next 5 or 10 years after the project; Definition of the activities

<i>Position Titles</i>	<i>US\$ per Person- wk</i>	<i>Estimated person- wks</i>	<i>Tasks to be performed</i>
			designed to achieve the set targets, and preparation of budget estimates for the proposed activities; Identification and securing of potential funding sources
ES&L Program Experts (Activity 5.1 – Bangladesh, Thailand, Vietnam)	1,785	33	Development of a strategy to promote, and eventually mandate, procurement of only high-efficiency equipment; Design and development of a mass purchasing program; Design of a pilot program on mass purchasing agreements for a selected EE product in private establishments
EE Product Market Experts (Activity 5.2 – Bangladesh, China)	1,785	8	Design of a survey on consumer information needs related to energy-efficient products.
EE Promotion Experts (Activity 5.3 – Bangladesh, Indonesia, Pakistan)	1,785	10	Design and development of a national awareness campaign using media; Development and promotion of financial incentives
EE Financing Experts (Activity 5.4 – Indonesia)	1,785	11	Design of consumer financing schemes for the purchase of EE equipment/appliances that comply with MEPS; Design of training programs on negotiating financing arrangements with EE equipment/appliance suppliers.
ES&L Harmonization Expert (Activity 5.5 – China)	1,785	50	Conduct of study on the establishment of a Regional ES&L Harmonization Facility; Conduct of regional training workshops/programs in selected ES&L testing facilities on the development and implementation ES&L programs and testing protocols for the 6 BRESL products; Design and implementation of pilots of developed harmonized ES&L test procedures and the application of ES&L tools

**ANNEX D: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS**

**A. EXPLAIN IF THE PPG OBJECTIVE HAS BEEN ACHIEVED THROUGH THE PPG ACTIVITIES UNDERTAKEN.**

All of the planned project development activities were carried out. There were no significant deviations in the planned costs and actual disbursements of the project development grant money (PDF-A).

**B. DESCRIBE IF ANY FINDINGS THAT MIGHT AFFECT THE PROJECT DESIGN OR ANY CONCERNS ON PROJECT IMPLEMENTATION.**

After learning the GEF Council approval of the inclusion of the proposed project in the GEF's November 2007 Work Programme, the Governments of the BRESL countries has been looking forward to the GEF's approval and implementation of this project. The main project partners, especially those that will be implementing the baseline activities, see this project as very important supplement for the current work that they are doing in promoting the widespread use of EE appliances in their respective countries, as well as in achieving harmonization of procedures, and later standards & labels within the Asian region. However, further delays in the project implementation may affect the timing of their work activities, and may affect the synergies that interest of, and the momentum established with, the local and regional partners.

**C. PROVIDE DETAILED FUNDING AMOUNT OF THE PPG ACTIVITIES AND THEIR IMPLEMENTATION STATUS IN THE TABLE BELOW:**

<i>Project Preparation Activities Approved</i>	<i>Implementation Status</i>	<i>GEF Amount (\$)</i>				<i>Co-financing (\$)</i>
		<i>Amount Approved</i>	<i>Amount Spent To-date</i>	<i>Amount Committed</i>	<i>Uncommitted Amount*</i>	
Reviewed and updated status of ongoing and planned ES&L activities in each participating Asian countries	Completed	US\$ 28,000	US\$ 28,000	US\$ 28,000	US\$ 0	---
Identified potential demonstration projects for piloting ES&L development and applications	Completed	US\$ 15,000	US\$ 15,000	US\$ 15,000	US\$ 0	---
Identified project stakeholder partners and stakeholder meetings documentation	Completed	---	---	---	US\$ 0	US\$ 2,500 (UNDP)
Conduct of a regional logical framework analysis (LFA) workshop	Completed	---	---	---	US\$ 0	US\$ 12,500 (UNDP) US\$ 12,000 (ICA) <sup>3</sup>
Assessed & Defined institutional framework	Completed	---	---	---	US\$ 0	US\$ 2,500 (UNDP)
Agreed arrangements and commitments on project co-funding and co-financing Requirements	Completed	---	---	---	US\$ 0	US\$ 2,500 (UNDP)
Draft BRESL FSP brief & Executive Summary	Completed	US\$ 3,000	US\$ 3,000	US\$ 3,000	US\$ 0	---

3 ICA- International Copper Association

<i>Project Preparation Activities Approved</i>	<i>Implementation Status</i>	<i>GEF Amount (\$)</i>				<i>Co-financing (\$)</i>
		<i>Amount Approved</i>	<i>Amount Spent To-date</i>	<i>Amount Committed</i>	<i>Uncommitted Amount*</i>	
Finalized BRESL FSP document	Completed	US\$ 4,000	US\$ 4,000	US\$ 4,000	US\$ 0	---
<b>TOTAL</b>		<b>US\$ 50,000</b>	<b>US\$ 50,000</b>	<b>US\$ 50,000</b>	<b>US\$ 0</b>	<b>US\$ 32,000</b>

\*Uncommitted amount should be returned to the GEF Trust Fund. Please indicate expected date of refund transaction to Trustee.



## **UNDP Project Document**

**Governments of Bangladesh, China, Indonesia, Pakistan, Thailand & Vietnam**

**and**

**United Nations Development Programme**

**BARRIER REMOVAL TO THE COST-EFFECTIVE DEVELOPMENT AND  
IMPLEMENTATION OF ENERGY EFFICIENCY STANDARDS AND LABELING  
PROJECT (BRESL)**  
(PIMS# 3327)

**Brief Description:**

BRESL is aimed at rapidly accelerating the adoption and implementation of energy standards and labels (ES&L) in Asia, and in so doing bring about energy savings from the use of energy efficient appliances/equipment. The project also facilitates harmonization of test procedures, standards and labels among developing countries in Asia, when appropriate. The project is expected to cost-effectively deliver an average 10% reduction in total residential and commercial energy use in partner countries at the time of peak impact by the year 2030 compared to a baseline scenario, thereby contributing to more environmentally sustainable and economically efficient development. BRESL will facilitate the transformation of the manufacture and sale of energy-efficient appliances and equipment through: 1) A regional initiative in Asia, with provision for general information, tools and training to all interested developing countries in the region plus customized efforts, all with a focus on regional cooperation; and, 2) National technical assistance to 5 developing countries in Asia. The project will focus largely on capacity building and assisting government, manufacturing, distributing, retail, consumer and environmental stakeholders throughout the Asian region to implement the most cost-effective energy efficiency measure available. In each participating country, priority activities will be carried out to help foster each country's preferred process for developing or expanding its ES&L program.



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### List of Acronyms

Acronym	Meaning
A/Cs	Air Conditioners
ACE	ASEAN Centre for Energy
AED	Academy for Educational Development
APEC	Asia-Pacific Economic Cooperation
APEC-ESIS	APEC Energy Standards Information System
APR/PIR	Annual Project Reports and Project Implementation Review reports
ASEAN	Association of Southeast Asian Nations
AWP	Annual Work Plans
BAU	business-as-usual
BRESL	Barrier Removal to the Cost-Effective Development and Implementation of Energy Efficiency Standards and Labeling
BSTI	Bangladesh Standards & Testing Institute
CES-BUET	Center for Energy Studies, Bangladesh University of Engineering & Technology
CFLs	compact fluorescent lamps
CLASP	Collaborative Labeling and Appliance Standards Program (NGO)
CNIS	China National Institute of Standardization
COs	Country Offices (UNDP)
CSC	China Standard Certification Center
CTs	Country Teams
DANIDA	Danish International Development Assistance
DEDE	Department of Alternative Energy Development and Efficiency (Thailand)
DGEED	Directorate General of Electricity and Energy Development (Indonesia)
DGEEU	Directorate General for Electricity and Energy Utilization (Indonesia)
DSM	Demand Side Management
EC&EE	Energy Conservation & Energy Efficiency
EE&C-SSN	Energy Efficiency and Conservation Sub-Sector Network (ASEAN)
EE	Energy Efficiency
EI	Electrical and Electronics Institute (Thailand)
EGAT	Electricity Generating Authority of Thailand
EGEE&C	Expert Group on Energy Efficiency & Conservation (APEC)
ELI	Efficient Lighting Initiative
ENERCON	National Energy Conservation Centre ((Pakistan)
EOI	Expression of Interest
EOP	End of Project
EPA	Environmental Protection Agency
EPPO	Energy Policy and Planning Office (Thailand)
ES&L	Energy-Efficiency Standards and Labels
EU	European Union
EUEEP	End-Use Energy Efficiency Project (China)
EVN	Electricity of Vietnam
FSP	Full Size Project
FTLs	fluorescent-tube lamps
GEF	Global Environment Facility
GFP	Government Focal Points
GHG	Greenhouse Gas
HEEMA	high-efficiency electric motor agreement
HEM	high-efficiency motor
ICA	International Copper Association
IEA	International Energy Agency

Acronym	Meaning
IFC	International Finance Corporation
IPMVP	International Monitoring and Verification Protocol
IPPs	independent power producers
IR	inception report
IW	inception workshop
KTL	Korea Testing Laboratory
LFA	United States Agency for International Development
LPAC	Local Project Appraisal Committee
M&E	monitoring and evaluation
MDG	Millennium Development Goals
MEPS	Minimum Energy Performance Standards
MME	Ministry of Mines and Energy
MMT	Million Metric Tons
MOCIE	Ministry of Commerce, Industry and Environment
MOE	Ministry of Environment (Pakistan)
MOI	Ministry of Industry (Vietnam)
MOST	Ministry of Science and Technology
MPR	Multi-Partite Review
MRAs	Mutual Recognition Agreements
MUPPER	Memorandum of Understanding on Promotion of Energy Efficient Refrigerators
NDRC	National Development and Reform Commission
NEX	Nationally-Executed
NGOs	Non-Governmental Organizations
NPC	National Project Coordinator
OP	Operational Program
PAC	Project Assurance Committee
PIMS	Project Information Management System
PMO	Project Management Office
PPM	Project Planning Matrix
PROMECC	Promotion of Energy Efficiency and Conservation
QPR	Quarterly Project Reports
RCU	Regional Coordination Unit
ROK	Republic of Korea
RPD	Regional Project Director
RPMU	Regional Project Management Unit
RPSC	Regional Project Steering Committee
SAC	Standardization Administration of China
SARI	South Asia Regional Initiative
SRF	Strategic Results Framework
TEPS	target energy performance standards
TISI	Thailand Industrial Standards Institute
UN	United Nations
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention for Climate Change
USAID	United States Agency for International Development
VEEPL	Vietnam Energy Efficiency Public Lighting (GEF project)

## SECTION I: Elaboration of the Narrative

### PART I: SITUATION ANALYSIS

#### *Context and Global Significance*

1. Energy-efficiency standards and labeling (ES&L) are among the most cost-effective types of policies and programs to mitigate global climate change. The reason for this is that these programs have the potential to effect complete market transformations for different classes of energy-saving products, at a cost far below the cost of providing new energy supply.
2. ES&L programs contribute to the realization of the Millennium Development Goals (MDG), particularly MDGs 1, 7 and 8, whereby the program can contribute to the eradication of extreme poverty, improve environmental sustainability of a country's and/or a region's development path, and help improve trade ties and develop global partnership for development.
3. Asia accounts for 28% of world energy use, with China, Japan, India and South Korea using 73% of the total energy used in the region. The average rate of growth in energy use in Asia over the past decade has been 3.7%, over double the 1.6% world average. Throughout this region, growth in the demand for electric power is requiring the extension and upgrading of electricity transmission and distribution networks. Energy use related to buildings (including use of appliances and equipment and lighting) accounts for a significant percentage of the region's total energy consumption. With the rapid economic growth in many countries in the region, the demand for major appliances and equipment - ranging from refrigerators and clothes washers in homes, to photocopiers and lighting equipment in office buildings - is expected to continue to grow. Such technologies primarily rely on fossil fuel based power generation, which is one of the major sources of greenhouse gas (GHG) emissions. It is estimated that, over the next decade, GHG emissions in the region will increase commensurate with economic growth, and these will have to be reduced if the global climate is to be stabilized.
4. Clearly, without focused efforts to better utilize energy efficient technology and reduce energy consumption by household and office appliances and equipment, energy demand in the residential and commercial sectors throughout Asia will continue to outstrip supply. The proposed project is entitled Barrier Removal to the Cost-Effective Development and Implementation of Energy Efficiency Standards and Labeling (BRESL). The goal of the project is the reduction in the annual growth rate of greenhouse gas (GHG) emissions from thermal power generation in selected Asian countries. The objective of the project is the removal of barriers to the development and effective implementation of energy efficiency standards and labeling (ES&L) programs, thereby facilitating the transformation of the regional product markets of targeted energy consuming appliances, equipment and lighting products. It will also facilitate harmonization of test procedures, standards and labels among developing countries throughout Asia, when appropriate. The project is applied for funding from the Global Environment Facility (GEF) and will be implemented by the United Nations Development Program (UNDP).
5. BRESL will be implemented on a regional basis in order to transform the regional product markets of the targeted appliances, equipment and lighting products, and address the common barriers to, and concerns about, ES&L by the participating countries. The harmonization of government policies and programmes that will help these markets deliver more energy

efficient products can be most efficiently addressed regionally. The project will focus largely on capacity building and assisting government, manufacturing, distributing, retail, consumer and environmental stakeholders throughout the Asian region to implement the most cost-effective energy efficiency measure available. The technical assistance activities that make up this GEF project will be carried out by key agencies in the participating countries. In each country, priority activities, selected among a menu of interventions that will be offered by the project to help foster each country's preferred process for developing or expanding its ES&L program.

### *Barriers to Energy Efficiency Standards & Labeling (ES&L) and Regional Harmonization on ES&L*

6. Most Asian countries regard ES&L programs as cost-effective ways to realize their energy efficiency goals, since they provide substantial electricity peak demand reduction and energy savings with attractive cost/benefit ratios. Such programs have proven to be effective for mitigating climate change in all countries in which they have been implemented. However, they are hindered by certain persistent barriers, which can be broadly classified into the following categories:<sup>1</sup>
  - Policy/regulatory;
  - Institutional;
  - Technical;
  - Information and awareness;
  - Market; and,
  - Financial.

More details on the barriers can be found in Annex B.

### Policy/Regulatory Barriers

7. Country's growth model hindering the promotion and implementation of ES&L programs: Without a policy framework that requires, or at least encourages, ES&L for energy-using equipment, manufacturers will tend to produce lower-cost equipment that is less efficient. In order to overcome this barrier, it is important to strengthen an understanding among policymakers about the importance and substantial benefits of ES&L programs.
8. No mandatory regulations for minimum energy performance standards (MEPS) or mandatory energy labeling: International experience has shown that a framework for mandatory MEPS is the key underlying sustained product efficiency improvements over time. Without mandatory programs, initial progress can be made, but there is no incentive for suppliers of very low efficiency equipment to improve their equipment. A number of countries have initiated voluntary product labeling, but the ultimate efficiency potential from voluntary labeling schemes is limited for many products because many suppliers of low-efficiency equipment choose not to apply the label. In order to overcome this barrier, it is important to develop a regulatory framework and systematically, over time, implement mandatory ES&L programs.
9. Lack of policy framework on ES&L: Few of the countries in the region have a systematic policy and regulatory framework for ES&L. The policy framework is important because it provides a road map for how to prioritize products; test their energy performance; and how to

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<sup>1</sup> The section on barriers draws on a survey carried out in participating countries, and further discussion at the Regional Stakeholder Workshop for the BRESL project held in Beijing during 30-31 August 2006.

set requirements for energy labeling and MEPS; and how to regularly review and update the labeling and MEPS requirements, which is critical to maintaining long-term energy efficiency improvements. The regulatory framework is important because it provides the legal basis for implementing the program. The barrier to development of such frameworks may be the belief that energy labeling alone can achieve energy savings, and the limited presence of such frameworks in the region. Korea is one of the only countries in the region with a systematic, integrated framework for testing, establishing MEPS, and integrating the MEPS into its labeling scheme, regularly updating the MEPS levels to make them more stringent. In order to overcome this barrier, it is important to highlight examples of best practice in ES&L and to promote adoption of systematic regulatory frameworks at the national level.

10. Difficulties in negotiations between manufacturers and stakeholders: Policymakers do not have experience with negotiating with equipment manufacturers to increase their efficiency levels. Without an ES&L framework, many countries take an *ad hoc* approach. The problem with this approach is that if there is a substantial minority of suppliers making or distributing low-efficiency equipment they will not agree to, or stall, efforts to develop aggressive MEPS and energy labeling requirements. The threat of mandatory MEPS and labeling is a necessary tool for the government in its negotiations, as is the possibility of limited technical assistance to help suppliers improve the efficiency of their products.

#### Institutional Barriers

11. Lack of integrated institutional approach to ES&L implementation: To date, implementation of ES&L in the region has been largely *ad hoc*, as has the selection of an implementing institution. For example, in Thailand, energy labeling was carried out for nine years by the electric utility (Electricity Generating Authority of Thailand), without any legal mandate, before the first minimum energy performance standard (MEPS) for end-use equipment (air conditioners). Similarly, Electricity of Vietnam (EVN) is carrying out programs to promote energy-saving lighting equipment (compact fluorescent lamps and thin-tube, "T8" fluorescent lamps) while the Vietnamese Ministry of Industry is in parallel developing a scheme for energy labeling and MEPS for these products. This barrier will be addressed through both regional and national-level training and capacity enhancement in the development and implementation of a standards and labeling scheme for the 5 targeted products.

#### Technical Barriers

12. Lack of regular testing programs for energy performance of end-use equipment: The BRESL project survey indicated that there are few if any regular programs for testing the energy performance of the target appliances in the participating countries. Such testing programs are critical to establishing the basis initially for energy labeling, and then for later establishment of MEPS. This barrier stems from the lack of clear regulatory framework and mandate and also from lack of awareness among policymakers of the importance of having a human and technical infrastructure for testing and certification of a number of products. This barrier will be addressed by strengthening of national and regional testing and certification infrastructure.
13. Lack of training programs on ES&L framework and implementation: There are no systematic training courses or modules covering the step-by-step process of building up an ES&L regime. In the past, there have been some one-off regional courses sponsored by USAID (e.g., for the South Asia Regional Initiative on Energy), but most of the technical assistance has been provided by direct consultancy to specific agencies that are responsible for establishing ES&L programs. The lack of commonly available training and course materials is a real barrier, which will be addressed through an ES&L Capacity-Building Program that will build

institutional and individual capacity to secure on-the-ground implementation of regulatory frameworks, as well as actual ES&L programs.

14. Lack of accredited testing laboratories: Accredited laboratories are needed for energy performance testing, and to implement harmonized standards across the region. In some cases, test laboratories are available, and can do testing of products, but the laboratory is not accredited, which means that the test results will not be accepted by any other agency in another country. This means that products have to be re-tested after they are imported into the destination country, and this creates a logistical and financial barrier to wider trade in energy-efficient products. In other cases, there are simply no test laboratories in the country, which means that it is not possible to test and label product efficiency, or that products must be tested overseas, which is very expensive. The lack of test laboratories (accredited or not), generally stems from the lack of a regulatory framework for ES&L and the perceived need among policymakers to fund, and implement, a means of performance measurement. This barrier will be addressed through the establishment of a regulatory framework for ES&L and the subsequent establishment of a testing and certification infrastructure.
15. No laboratories for equipment efficiency testing: This is directly related to the institutional barrier above on the lack of accredited test laboratories. For example, the Philippines has done fairly well on its ES&L programs for several products (e.g., lighting, refrigerators, air conditioners) because they long ago established a appliance testing laboratory to measure the energy performance of equipment. This barrier will be addressed in the BRESL project primarily institutionally, through the long-term strengthening of the infrastructure for testing and certification. In some cases there are labs that can be modified or upgraded to perform the testing; but in many cases, there is a need to develop a plan and seek funding for establishment of a test lab. For such decisions, it is important to do an assessment of existing testing capacity and needs.
16. Lack of technical knowledge on ES&L assessments: In cases where ES&L have been implemented for several products (i.e. China, Thailand), there is some local knowledge of the technical basis and terms for carrying out a benefit-cost analysis for energy labeling and MEPS requirements. For many of the countries, however (e.g., Bangladesh, Indonesia, Vietnam), there will be limited institutional knowledge on the framework for terms of reference for carrying out a benefit-cost analysis for an ES&L regime. Often, the work is done by an outside consultant (paid for by an international agency), with limited direct involvement from the implementing agency in the host country. This barrier will be addressed by building institutional and individual capacity to secure on-the-ground implementation of regulatory frameworks, as well as the design of actual programs for MEPS and energy labeling programs.

#### Information and Awareness Barriers

17. Insufficient public awareness about energy-saving equipment: The lack of public awareness stems in part from the policy barriers above: in many Asian countries, there is not a strong ES&L framework with a requirement for mandatory labeling of all equipment and gradual adoption of MEPS. As the price of oil increases, consumers become much more aware of their role in saving energy, but without even a comprehensive scheme of energy testing and labeling of appliances (let alone establishment of MEPS), the energy performance of appliances that a consumer purchases is relatively “invisible”. This barrier will be addressed largely at the policy level, through the root cause, by working to strengthen the policy context for EE technologies.

## Market Barriers

18. Market not driven to EE equipment because without labeling, energy efficiency is an invisible attribute: Without a requirement for energy labeling, there is no driver either for producers to produce energy-saving equipment, or for consumers to pro-actively select such equipment. This is because without energy labeling, energy efficiency is basically an invisible attribute and plays little or no role in the consumer selection process. This barrier will be addressed through the application and enforcement of ES&L legislation and regulations; as well as through capacity enhancement in the development and implementation of ES&L.
19. Limited or no market monitoring and sampling suffer due to lack of manpower and funds: Unfortunately, enforcement and compliance appears to be an afterthought in the implementation of ES&L programs. Survey respondents pointed to the lack of market monitoring and sampling as a key weak link in the chain of ES&L implementation. This barrier will be addressed through strengthening of policy context for EE technologies; application and enforcement of ES&L legislation and regulations; and capacity enhancement in the development and implementation of standards and labeling for the 5 targeted products.
20. Lack of knowledge about the benefits of ES&L among sellers and buyers: This barrier stems from the general lack of public awareness campaigns, which is due in large part to the lack of widespread energy labeling of products. In most of the countries surveyed, energy testing and labeling schemes were in place for only 1 or 2 products - if at all! This barrier will be addressed through application and enforcement of ES&L legislation and regulations; and capacity enhancement in the development & implementation of ES&L for the target products.
21. Table 1 below summarizes the barriers identified in a recent regional survey carried out by UNDP, and indicates the project component under which the barrier will be addressed.

**Table 1: Summary of Barriers to Implementation of ES&L Programs**

Identified Barrier in BRESL Survey	Activities Addressing Barrier
<b>Policy/Regulatory</b> No mandatory regulations for minimum energy performance standards (MEPS)	<b>Activity 1.1:</b> Strengthening of the Policy Context for Energy Standards and Labels <b>Activity 1.2:</b> Adoption and Implementation of Energy Standards and Labeling Regulations <b>Activity 2.1:</b> Training to Strengthen and Enable Public Institutions to Support Development and Implementation of ES&L Programs <b>Activity 2.2:</b> Capacity Enhancement in the Development and Implementation of Standards and Labeling for the 6 Targeted Products <b>Activity 4.2:</b> Lessons Learned Reports <b>Activity 5.1:</b> Government Procurement (Bangladesh, Indonesia, Thailand, and Vietnam)
Country's growth model hindering the promotion and implementation of ES&L programs	<b>Activity 2.1:</b> Training to Strengthen and Enable Public Institutions to Support Development and Implementation of ES&L Programs <b>Activity 4.2:</b> Lessons Learned Reports
Lack of policy framework on ES&L	<b>Activity 1.1:</b> Strengthening of the Policy Context for Energy Standards and Labels <b>Activity 2.1:</b> Training to Strengthen and Enable Public Institutions to Support Development and Implementation of ES&L Programs <b>Activity 2.2:</b> Capacity Enhancement in the Development and



Identified Barrier in BRESL Survey	Activities Addressing Barrier
	Implementation of Standards and Labeling for the 6 Targeted Products <b>Activity 5.1:</b> Government Procurement (Bangladesh, Indonesia, Thailand, and Vietnam)
Difficulties in negotiations between manufacturers and stakeholders	<b>Activity 2.3:</b> Strengthening of National and Regional Testing and Certification Infrastructure <b>Activity 2.4:</b> Strengthening of Data Collection and Reporting Procedures on Equipment Availability and Sales by Efficiency Level in Participating Countries <b>Activity 3.2:</b> Educational Workshops for Manufacturers and Retailers on Impacts of Standards on Manufacturers and Retailers and Ways to Work with Standards to Increase Profitability <b>Activity 3.3:</b> Technical Assistance to Manufacturers
<b>Institutional</b>	
Lack of accredited testing laboratories	<b>Activity 2.3:</b> Strengthening of National and Regional Testing and Certification Infrastructure
No independent institution to carry out program	<b>Activity 2.2:</b> Capacity Enhancement in the Development and Implementation of Standards and Labeling for the 6 Targeted Products
<b>Technical</b>	
Lack of regular testing programs for energy performance of end-use equipment	<b>Activity 2.3:</b> Strengthening of National and Regional Testing and Certification Infrastructure <b>Activity 2.4:</b> Strengthening of Data Collection and Reporting Procedures on Equipment Availability and Sales by Efficiency Level in Participating Countries <b>Activity 3.1:</b> Product Technical Analysis and Reports
Lack of training programs on ES&L framework and implementation	<b>Activity 2.1:</b> Training to Strengthen and Enable Public Institutions to Support Development and Implementation of ES&L Program
No lab for equipment efficiency testing	<b>Activity 2.3:</b> Strengthening of National and Regional Testing and Certification Infrastructure <b>Activity 3.3:</b> Technical Assistance to Manufacturers
Lack of technical knowledge on ES&L assessments	<b>Activity 2.1:</b> Training to Strengthen and Enable Public Institutions to Support Development and Implementation of ES&L Programs <b>Activity 2.2:</b> Capacity Enhancement in the Development and Implementation of Standards and Labeling for the 6 Targeted Products <b>Activity 2.4:</b> Strengthening of Data Collection and Reporting Procedures on Equipment Availability and Sales by Efficiency Level in Participating Countries <b>Activity 4.2:</b> Lessons Learned Reports <b>Activity 5.2:</b> Database (and Web Site) of Energy-Efficient Equipment (Bangladesh and China)
<b>Information and Awareness</b>	
Insufficient public awareness about energy-saving equipment due to low government priority and lack of funding	<b>Activity 1.1:</b> Strengthening of the Policy Context for Energy Standards and Labels <b>Activity 2.4:</b> Strengthening of Data Collection and Reporting Procedures on Equipment Availability and Sales by Efficiency Level in Participating Countries <b>Activity 5.1:</b> Government Procurement (Bangladesh, Indonesia, Thailand, and Vietnam) <b>Activity 5.2:</b> Database (and Web Site) of Energy-Efficient Equipment (Bangladesh and China) <b>Activity 5.3:</b> Development of consumer education schemes (Bangladesh, China, Indonesia, and Pakistan)

Identified Barrier in BRESL Survey	Activities Addressing Barrier
<b>Market</b>	
Market not driven to EE equipment because without labeling energy efficiency is an invisible attribute	<b>Activity 1.2:</b> Adoption and Implementation of Energy Standards and Labeling Regulations <b>Activity 2.2:</b> Capacity Enhancement in the Development and Implementation of Standards and Labeling for the 6 Targeted Products <b>Activity 5.1:</b> Government Procurement (Bangladesh, Indonesia, Thailand, and Vietnam)
Limited or no market monitoring and sampling suffer due to lack of manpower and funds	<b>Activity 1.1:</b> Strengthening of the Policy Context for Energy Standards and Labels <b>Activity 1.2:</b> Adoption and Implementation of Energy Standards and Labeling Regulations <b>Activity 2.4:</b> Strengthening of Data Collection and Reporting Procedures on Equipment Availability and Sales by Efficiency Level in Participating Countries <b>Activity 5.2:</b> Database (and Web Site) of Energy-Efficient Equipment (Bangladesh and China) <b>Activity 5.3:</b> Development of consumer education schemes (Bangladesh, China, Indonesia, and Pakistan)
Lack of knowledge about the benefits of ES&L among sellers and buyers	<b>Activity 1.2:</b> Adoption and Implementation of Energy Standards and Labeling Regulations <b>Activity 2.2:</b> Capacity Enhancement in the Development and Implementation of Standards and Labeling for the 6 Targeted Products <b>Activity 3.2:</b> Educational Workshops for Manufacturers and Retailers on Impacts of Standards on Manufacturers and Retailers and Ways to Work with Standards to Increase Profitability <b>Activity 5.1:</b> Government Procurement (Bangladesh, Indonesia, Thailand, and Vietnam) <b>Activity 5.3:</b> Development of consumer education schemes (Bangladesh, China, Indonesia, and Pakistan)

22. The identified barriers were discussed, verified and confirmed during a Regional Stakeholder Consultation Workshop, in which the project framework design was developed using logical framework analysis (LFA). The project activities to remove the barriers were also reviewed and confirmed. The agreed project planning matrix (PPM) is shown in Section II, Part II.

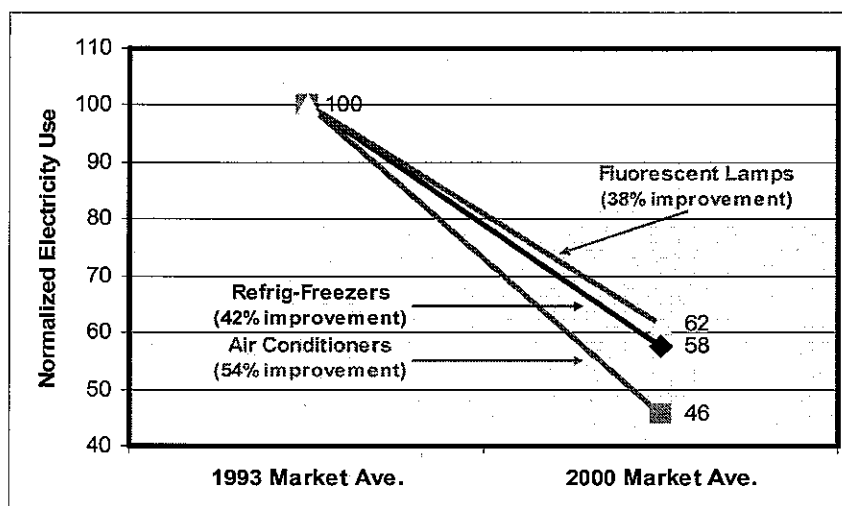
*Institutional, Sectoral and Policy Context*

23. International experience has shown that ES&L programs have the potential to reduce the unit energy consumption of end-use equipment by as much as 30-50% within a time frame of five to ten years. These savings can be obtained systematic application of a regime that includes product testing, energy labeling, and establishment of minimum energy performance standards for the most significant energy-using equipment in the home. These savings pay for themselves over time, and the efficient equipment has a lower life-cycle cost for consumers.

24. Recently, an APEC report based on a set of international expert consultations<sup>2</sup> concluded that ES&L programs should be a national priority; but that at the same time, in order to maximize the impact of a national program, countries should also work internationally with like-minded governments and trading partners to harmonize ES&L efforts. The report also included

<sup>2</sup> *A Strategic Vision for International Cooperation on Energy Standards and Labeling: A Monograph with Commentary by International Experts.* Published by Australian Greenhouse Office. June 2006.

examples of the significant energy savings and CO2 emissions reductions that can be achieved through ES&L in a relatively short time frame. Figure 1 below shows product efficiency improvements in the range of 40-60% in Korea over a seven-year time period. This level of savings was only possible through application of a combined, integrated program including mandatory labeling linked to mandatory energy performance standards (MEPS).



**Fig. 1: Change in Average market Efficiency of Korean Appliances, 1993 – 2000<sup>3</sup>**

25. In general, Asian energy policymakers understand the benefits from the implementation of an effective ES&L program, and ES&L program are considered a core part of most countries' overall energy efficiency programs. However, despite this high awareness of ES&L, and the prevalence of ES&L programs in Asia, only a few Asian countries are systematically implementing ES&L programs in a way that leads to significant, sustained savings. This is because many countries begin ES&L with voluntary energy labeling, and they are reluctant to counter pressure from manufacturers against imposition of mandatory labeling or MEPS.
26. Currently, the number of countries with ES&L programs in Asia is 12 and these programs cover more than 25 different types of products (see Table 2). Although the number of ES&L programs in place is increasing, the rate of increase is slow, and there are many countries with few or no programs in place. In addition, the vast majority of the ES&L programs is mandatory, and is not regularly updated to continually yield efficiency improvements.

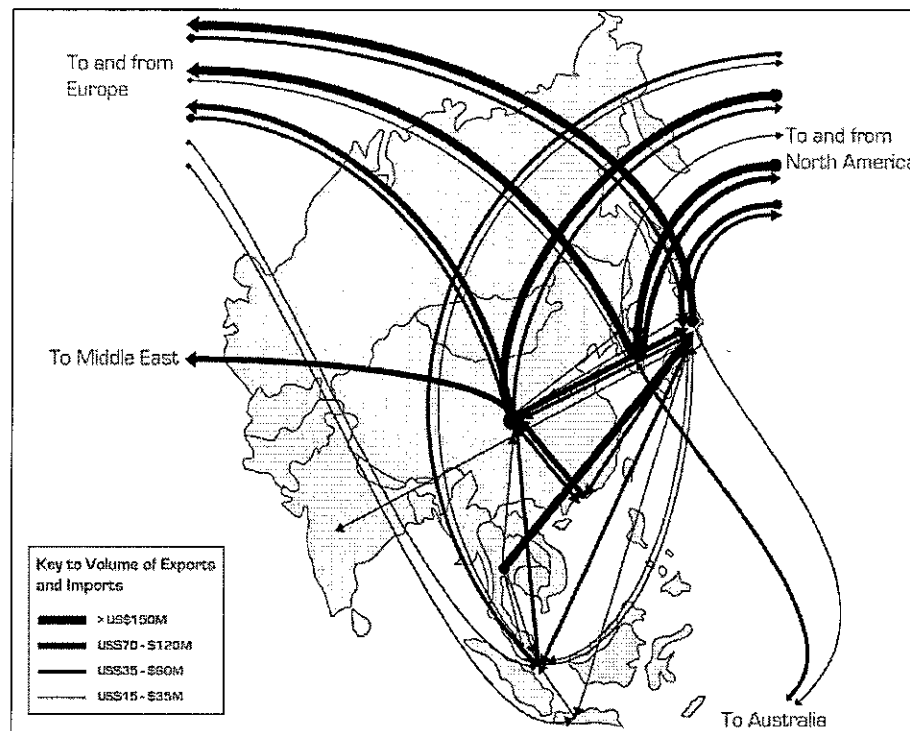
**Table 2: Cumulative Number of Standards and Labeling Programmes in Asia and Worldwide (as of the end of 2005)**

Region	Pre-1980	1980-1985	1986-1990	1991-1995	1996-2000	2001-2005
Asia	1	2	5	10	11	12
Worldwide	5	9	15	38	46	62

Source: Collaborative Labeling and Appliance Standards Program (CLASP). Based on Wiel and McMahon (2005) and ESIS web site (2006)

<sup>3</sup> Lee Sun-Keun, 2001. "MEPS Experience in Korea." Paper presented at the conference, *Lessons Learned in Asia: Regional Conference on Energy Efficiency Standards and Labeling*. Organized by Collaborative Labeling and Appliance Standards Program (CLASP) and the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP). Bangkok, Thailand. 29-31 May.

27. Clearly, there is a need to increase the number of ES&L programs, while at the same time building capacity to establish the institutions to operate the program and to effectively implement and monitor the programs. There is also a need for more urgency in efforts to harmonize and align regulatory processes. The consensus of the international consultations sponsored by APEC was that the first and most productive area for exploring alignment is in energy performance test procedures, since this facilitates the ability to manufacture and sell products across different markets, and also allows a consistent comparison of energy performance and energy efficiency.



**Fig. 2: Exports and Imports of Refrigerators throughout Asia**  
(70% of product trade shown)

28. Appliance, equipment and lighting products manufactured in the countries in the region are presently found both in regional and global markets. For example, most of the refrigerators that are used throughout Asia are made in China, South Korea, Japan, Singapore, Europe or the United States. However, nearly all countries manufacture some refrigerators for internal sale and export. For instance, Indonesia, which manufactures refrigerators, still imports refrigerators from eleven Asian countries and exports refrigerators to these same eleven plus four other Asian countries. A chart showing this product flow throughout Asia is shown in Fig. 2 above.

29. With regard to ES&L information, a number of authoritative information sources are now available with data and tools on international standards and labeling efforts. Three of the most prominent are the APEC Energy Standards Information System (APEC-ESIS); the Collaborative Labeling and Appliance Standards Program (CLASP); and the International Energy Agency (IEA). APEC has entered into a sponsorship agreement with CLASP, and that this has led to the development of a new Global Standards and Labeling Database, which was formally launched in mid-2005.

*Stakeholders and Regional Collaboration in ES&L*

30. The proposed project is designed to build on the present capacity for ES&L programs in some of the Asian countries, as well as on the outputs and lessons learned from the implementation of previous and ongoing ES&L initiatives in the region, which are mostly sub-regional collaborations addressing ES&L:
31. **APEC Expert Group on Energy Efficiency & Conservation, under the APEC Energy Working Group** - For nearly a decade, APEC has been actively working to reduce the barriers to trade from the proliferation of different energy standards, and to facilitate energy efficiency improvements. The APEC Energy Ministers have directed that APEC economies introducing or preparing mandatory energy-efficiency requirements should advise other economies of these proposals before they are implemented. In addition, they have directed APEC to develop a Standards Notification Procedure to facilitate the co-ordination of the development of energy standards and technical requirements. Through the APEC Experts Group on Energy Efficiency & Conservation (EGEE&C), APEC has focused on harmonization to reduce barriers to trade in energy-efficient appliances and equipment. Its efforts since 1997 have culminated in the development in 2002 of an, web-based Energy Standards Information System (ESIS – [www.apec-esis.org](http://www.apec-esis.org)); a user-friendly, web-based database that provides regularly updated, comprehensive information on technical standards for energy-using equipment in the 21 APEC economies.
32. **South Asia Regional Initiative (SARI) – Energy** - The SARI-Energy initiative is funded by the U.S. Agency for International Development. SARI countries (Bangladesh, Bhutan, India, Nepal, Maldives, and Sri Lanka) conducted three EE S&L Harmonization Meetings in Sri Lanka and India during 2003 to 2005. The meetings were organized by the Academy for Educational Development (AED), Nexant Consultants, and the Collaborative Labeling and Appliance Standards Program (CLASP). Through the SARI program, countries in the region worked on a Harmonization Road Map, with the objective of harmonizing test protocols, strategy and structure for regional harmonization in the area of appliance/equipment energy standards and labeling. The SARI initiative on ES&L been regarded as an example of the strong potential for regional cooperation. Unfortunately, the ASEAN effort also not gone forward due to lack of funding and lack of strong leadership among the South Asian countries.
33. **Association of Southeast Asian Nations (ASEAN)** - In 1999, ASEAN energy ministers identified the development of an ES&L initiative for the ASEAN region as an ASEAN priority in the energy sector. The ASEAN leader highlighted ES&L in order to curb growing electricity demand in the region, and in light of the proven success of energy ES&L programs being pursued by some of its ten member countries. The ASEAN Energy Efficiency and Conservation Sub-Sector Network (EE&C-SSN) under the ASEAN Centre for Energy (ACE) was given a mandate to develop and implement the ASEAN Energy Labeling Project. The objective was to accelerate the rate of improvement in the energy efficiency of end-use equipment, while avoiding the introduction of regional non-tariff trade barriers. Due to limited funding, the ASEAN countries decided that the label would be a voluntary endorsement type that could be used alone or with national labels. An initial round of labels were developed for electromagnetic ballasts for fluorescent lamps (2004-2005); followed by refrigerators (2005-2006); and, soon to come, air conditioners, electric motors and fans (2006-2009). Unfortunately, the ASEAN energy labeling project never got off the ground – in large part due to financial constraints and the lack of a strong lead agency.
34. **CFL Harmonization Schemes** - One set of harmonization schemes that appears headed for success are for compact fluorescent lamps (CFLs). The Efficient Lighting Initiative (ELI)

includes a certification scheme for energy-efficient lighting, that currently focuses primarily on labeling of CFLs. ELI was initiated as a seven-country, US\$ 15 million GEF-funded initiative managed by the International Finance Corporation (IFC). After the project ended in 2003, IFC issued an international tender and supported the establishment of the ELI Quality Certification Institute to operate the ELI certification and labeling scheme. The Institute is located in Beijing and is managed by the China Standardization Center (CSC), and ELI's CFL technical specifications have been adopted by a number of countries internationally that are operating large-scale CFL programs.

35. A related initiative is the International CFL Harmonization Initiative, which is an international effort supported by the major CFL manufacturers, a number of national governments, lighting trade associations, and NGOs active in the energy and lighting field. The CFL Harmonization Initiative has two main objectives: to develop a single, international, harmonized test procedure for CFLs through the International Electrotechnical Commission; and to develop a common set of internationally recognized performance specifications, which can be voluntarily adopted by governments in order to rationalize the way that CFLs are regulated internationally. This is especially important, since 90% of CFLs are made in China, and they are currently regulated internationally by more than 33 different sets of MEPS and labeling programs in countries around the world. Since CFLs are one of the core products in BRESL, the BRESL countries will have an excellent opportunity to coordinate their activities through the two ongoing CFL harmonization efforts -- the ELI program and the International CFL Harmonization Initiative.
36. Through the proposed BRESL project, the participating Asian countries will work together to coordinate and share information on their ES&L programs. Such cooperation is envisioned as something that will yield the benefits of greater market transparency, reduced costs for monitoring and evaluation (M&E) and product testing, enhanced prospects for trade and technology transfer, reduced costs for developing government and utility energy efficiency programs, and open trading of energy efficient appliances/equipment.
37. The BRESL project will also collaborate with IEA countries in the Asia-Pacific region (Australia, Canada, Japan, Korea, New Zealand and the U.S), which are important current and future trading partners. Moreover, BRESL will also collaborate with several other GEF-funded projects that include ES&L components as major activities in achieving GHG emission mitigation goals.
38. The BRESL project will work with national teams and government counterparts associated with the above regional efforts, as well as with other UNDP/GEF projects in the region to collaborate in the design and implementation of national ES&L programs. It will also build on outputs/outcomes of previous GEF-funded ES&L-related projects in the region like the completed Efficient Lighting Initiative (ELI) in the Philippines. ELI follow up activities are currently being handled out of Beijing by CSC, which is also a partner for the End-Use Energy Efficiency Project (EUEEP) project in China. With the National Development and Reform Council's (NDRC) strong mandate to coordinate all ongoing activities in China, it is hoped that many of the past stand-alone activities on standards & labels by different agencies on different appliances can coherently be brought under one umbrella. The project will pursue new ES&L goals and attempt to stimulate a regional sharing of the expertise that is expanding throughout the region.
39. Table 3 below summarizes the ongoing and planned cooperation efforts for regional initiatives on ES&L. The donor projects include both GEF projects and a range of other donor-funded projects. This indicates the substantial amount of leverage that will be provided

by the BRESL project. While many of the initiatives below are in-country efforts to develop standards for specific projects, none of the current or ongoing efforts takes the regional approach that BRESL will take to facilitate regional cooperation, harmonization, and actual implementation, of energy labeling and MEPS for a set of core energy-using appliances and products.

**Table 3: Summary of BRESL Country Involvement in Regional Cooperation or Harmonization Efforts Related to ES&L**

Country	Description of Involvement	Donor
Bangladesh	Energy Efficiency Improvement in Industries (appraisal mission completed, will include some ES&L)	GTZ
	Energy efficiency standard and labeling	USAID-SARI/E
China	Harmonization with CSC and U.S. Energy Star	U.S. EPA
	Certification of Energy Efficiency Power Adapters	Energy Foundation
	Development of labeling technical specification for office equipment	Energy Foundation
	Riding the New Digital Wave: Developing Energy Efficiency Labeling and MEPS for Set Top Boxes in China	Energy Foundation
	Barrier Removal for the Efficient Lighting Products and Systems (China Green Lights) (completed)	UNDP/GEF
	Barrier Removal for the Widespread Commercialization of Energy-Efficient CFC-Free Refrigerators (completed)	UNDP/GEF
	End-Use Energy Efficiency Project (EUEEP)	UNDP/GEF
	Cooperation CSC and Australian government on ES&L	AGO (Australia)
	Efficient Lighting Initiative	International Finance Corp.
	International CFL Harmonization Initiative	Australia, United Kingdom
Indonesia	ASEAN Regional Standards and Labeling Harmonization Program	ASEAN
Korea	The development of the test standard and the energy efficiency level for Kimchi refrigerator	Ministry of Commerce, Industry, and Energy
	The development of the test standard and the energy efficiency level for Dishwasher	Ministry of Commerce, Industry, and Energy
	The development of MEPS level for AC and refrigerator	Ministry of Commerce, Industry, and Energy
	The development of the test standard and the energy efficiency level for Freezer	
	The development of the test standard and the high energy efficiency level for Heat Recovery Ventilator	
Pakistan	Energy Efficiency, Product Labeling and Consumer Concerns	SARI/E
Thailand	DSM energy labeling for refrigerators, air conditioners, electric fans, ballasts, rice cookers, etc.	World Bank/GEF and Thailand funding
	Promotion of EE through 30% subsidy program for energy-efficient equipment for buildings and factories	DANIDA and Thailand funding
	ASEAN Regional Standards and Labeling Harmonization Program	ASEAN
Vietnam	Vietnam Phase 2 DSM (CFLs, FTLs, solar water heaters)	World Bank/GEF
	Promoting Energy Conservation in SMEs	UNDP/GEF
	Vietnam: Energy Efficiency Public Lighting (VEEPL)	UNDP/GEF

Source: Based on May 2005 GEF concept paper for BRESL project; May 2006 BRESL survey; and consultant's research.

*Baseline Scenario*

40. Countries in the Asian region are at various levels of development and implementation of ES&L programs. Some countries, such as Korea, China, Thailand, and the Philippines have fairly well developed ES&L programs for several products, but are at variance from each other. Other countries have programs in their beginning stages or no programs at all.
41. Presently, ES&L programs are carried out at the national level and – despite the regional cooperation efforts mentioned above – nearly entirely without the benefit of exchange of both technical and human capital with other countries in the region. Initial indications of interest from some of the target countries in the region (particularly those from ASEAN) were expressed during an APEC-sponsored energy efficiency standards and label workshop that was held in Taiwan in November 2003. Table 4 provides an overview of information on the countries participating in the BRESL project.

**Table 4: Comparative Information on the BRESL Countries (including Republic of Korea)**

BRESL Country	Population (million)	Annual Elec Use (GWh/yr)	Peak Electric Demand (MW)	Electricity Growth Rate (%/yr)	Estimated Appliance Saturation Rates		
					Refrigerators	Air Conditioners	Rice Cookers
Bangladesh	140	21,408	4,700	7.5	25%	7%	0%
China	1,295	2,194,300	332,200	15.2	32%	18%	31%
Indonesia	NA	101,800	NA	NA	25%	7%	0%
Korea	47.3	332,413	54,631	NA	104%	42%	105%
Pakistan	159	85,629	17,914	5.9	NA	NA	NA
Thailand	61	126,000	21,000	5.7	101%	29%	99%
Vietnam	84	39,000	8,500	15.5	27%	7%	66%

42. Table 28 in Annex C shows the volume of stock and sales of each BRESL product in 2004. Only the products that each BRESL country will work on under this regional project are shown. These data were used as baseline in estimating the anticipated energy consumptions and CO<sub>2</sub> emissions under a business-as-usual scenario. These were also used in estimating the potential energy savings and corresponding CO<sub>2</sub> emission reductions from the utilization of the improved and energy efficient versions of the 6 BRESL products under the alternative scenario, which the BRESL project aims to achieve.
43. The baseline scenario is that countries in the region continue to develop their ES&L programs, but still at a slow and uneven pace and hindered by and the mentioned barriers in financing, policy, technology and information. This is the “business-as-usual” scenario in the field of ES&L development and implementation in Asia. Table 5 summarizes the existing status of energy labeling programs among the BRESL countries, and Table 6 indicates which countries have MEPS in place.<sup>4</sup> Clearly, China and Korea are the most active. Thailand is quite active in the area of labeling, but has only implemented MEPS for one product to date.

**Table 5: Current Status of Energy Labeling Programs in BRESL Countries (including Republic of Korea)**

<sup>4</sup> The data in these tables are based on responses from the BRESL survey carried out in May 2006. The status of labeling and MEPS were updated during the regional stakeholders’ consultation workshop held in Beijing, China during 30-31 August 2006, as part of the project development activities.



Product	Bangladesh	China	Korea	Pakistan	Thailand	Vietnam
Refrigerator		•	•	•	•	
Freezer			•			
Kimchi Refrigerator			•			
Room Air-conditioner		•	•	•	•	
Washing Machine		•	•			
Horizontal drum washing machine		•	•			
Dishwasher			•			
Dish drier			•			
Electrical Water Cooler Heater			•			
Brown rice cooker					•	
Rice cooker		•	•		•	
Vacuum cleaner			•			
Residential Fan	•		•	•	•	
Incandescent lamp	•		•	•		
Compact fluorescent lamp		•	•	•	•	
Fluorescent tube lamp	•	•	•	•		
Fluorescent lamps ballast		•	•		•	
HID Lamp		•				
Associated ballast		•	•			
Household Gas Boiler			•			
Luminaire					•	
Electric motor (3-phase)			•	•		
Air Cleaner			•			

Source: May 2006 BRESL survey and consultant's research; updated at BRESL Stakeholder Consultation Workshop in Beijing during 30-31 August 2006. Data are not available for Indonesia.

**Table 6: Current Status of Minimum Energy Performance Standards (MEPS) in Selected BRESL Countries (including Republic of Korea)**

Product	China	Korea	Thailand	Vietnam
Refrigerator	•	•	•	
Freezer	•	•		
Kimchi Refrigerator		•		
Room Air-conditioner	•	•	•	
Washing Machine	•	•		
Horizontal drum washing machine	•	•		
Dishwasher		•		
Dish drier		•		
Electrical Cooler and Heater for Drinking Water		•		
Rice cooker	•	•		
Vacuum cleaner		•		
Residential Fan	•	•		
Incandescent lamps	•	•		•

Product	China	Korea	Thailand	Vietnam
Compact fluorescent lamp	●	●		
Fluorescent tube lamp	●	●		●
Fluorescent lamps ballast	●	●		●
HID Lamp	●			
Associated ballast	●	●		
Electric motors (3-phase)	●	●		●
Air Cleaner		●		
Household Gas Boiler		●		
Industrial pumps	●			
Television	●			
Gas heater	●			
Radio	●			
Iron	●			

Source: May 2006 BRESL survey and consultant's research; updated at BRESL Stakeholder Consultation Workshop in Beijing during 30-31 August 2006. Data are not available for Bangladesh & Indonesia

44. **Bangladesh:** Bangladesh enacted a National Energy Policy in 1996. The plan gives special importance to energy efficiency. The plan calls for awareness campaigns, the gradual implementation of ES&L programs, and energy auditing and training. The Bangladesh Standards and Testing Institute has primary responsibility for implementation of ES&L. Bangladesh has plans to initiate energy labeling programs for a number of products. *Bangladesh is only likely to make very minimal progress on labeling and MEPS in a baseline mode, without the GEF assistance to attend the regional technical product working groups and the technical assistance in the analysis and implementation of ES&L.*
45. **China:** China enacted an Energy Conservation Law in 1997. The law aims to achieve the rational and efficient use of energy through enhanced energy use management, the adoption of measures, and the reduction of loss and waste in the energy production and consumption chain. Since then, the various state agencies responsible for standardization and certification have been aggressively developing new measures to implement the Energy Conservation Law. These include China the National Institute of Standardization, which is responsible for the development, implementation and supervision of MEPS; and the China Standardization Center (CSC), which is responsible for endorsement labeling. Starting in 1998, China focused on its endorsement labeling program for high-efficiency products. Starting in 2003, China also announced and began implementing a comparative labeling program, which is now mandatory for several products. A Medium- and Long-term Energy Conservation Plan was drafted in 2004. The plan sets the following targets: (a) energy consumption per unit of GDP in 2010 shall 20% lower than the level in 2005; (b) water consumption in industry is targeted for a reduction of 30%; (c) the effective coefficient of irrigation water use is targeted to increase to 0.5; and, (d) the integrated utilization of industrial solid waste rate is targeted to increase to more than 60%. *China therefore has a strong base of existing products covered by MEPS, mandatory labeling, and voluntary labeling. China will not participate in the BRESL product for refrigerators and electric motors, since their MEPS for these products are under development; however, they will participate through BRESL in the development of ES&L for the other four products – air conditioners, ballasts, electric fans, and rice cookers.*
46. **Indonesia:** In Indonesia, the Directorate General of Electricity and Energy Development (DGEED), under the Ministry of Mines and Energy (MME), completed a Master Plan in 1995

for Energy Conservation. The plan included an import tax reduction on high-efficiency equipment and soft loans for companies implementing energy efficiency improvements. DGEED is also responsible for developing and establishing national energy standards. However, no minimum energy efficiency standards have been imposed on any electrical products in Indonesia. At present, Indonesia is in the process of drafting national standards for room air conditioners, electric water heaters, televisions and electric irons. When implemented, the standards will mandate minimum energy efficiency levels for these products. *Progress on ES&L has been very slow in Indonesia, and without the GEF assistance it is unlikely to actually effectively implement 1-2 labeling programs and the same number of MEPS over the next five years.*

47. **Korea:** The Republic of Korea's effort to promote energy efficiency and conservation was triggered by the two oil crises of the 1970s. To overcome its high-energy prices and unstable supply, the Korean government developed energy efficiency and conservation policies. The result is one of the most extensive ES&L programs in the region, with mandatory standards and labels covering a broad range of products. The key legislation on energy efficiency in Korea is the Rational Energy Utilization Act of 1992. Programs implemented under the framework of this act include the Energy Efficiency Labeling & Standards Program, the Energy-Saving Office Equipment & Home Electronics Program; and the High-Efficiency Equipment Certification Program. *As a long-time regional leader in the implementation of ES&L, Korea will participate actively in the program, but will not be a recipient of GEF funding. Korea will share information, attend meetings, and provide technical assistance. In particular, Korea will participate in a process of coordinating MEPS and labeling for four of the target products: air conditioners, refrigerators, motors, and CFLs.*
48. **Pakistan:** Pakistan developed and adopted a National Conservation Strategy (NCS) in 1992, which emphasizes the adoption of Energy Conservation activities, which include among others, energy standards & labeling of household equipment and appliances. As a follow up to the NCS, a National Environmental Action Plan (NEAP) was formulated, which employed a cross-sectoral and holistic approach in achieving energy conservation and energy efficiency in the use of household equipment and appliances. The Pakistan Standards and Quality Control Authority Act, 1996 also provides some directions for standardization and labeling of products, processes or services. Presently there are no legislations for the development of labeling and standards setting programs but there some voluntary programs conducted which were adjudged as effective. *Despite the technical assistance on EC&EE provided by the National Energy Conservation Center (ENERCON), progress in the area of ES&L has been very slow in Pakistan, and without the GEF assistance it is unlikely to effectively secure legislative support for, as well as provide the necessary technical capacity in the development and implementation of, a national ES&L program.*
49. **Thailand:** Thailand has one of the more active energy conservation frameworks in Asia. The Ministry of Energy is the overall agency in charge of energy policy, and the Department of Alternative Energy Development and Efficiency (DEDE) serves as Chair of a Working Group on Energy Standards and Labeling. DEDE has responsibility for setting high-efficiency levels for energy-using equipment and for establishing MEPS; the Electricity Generating Authority of Thailand (EGAT) has been running a voluntary energy labeling program covering several types of end-use equipment since 1996; the Energy Policy and Planning Office (EPPO) is responsible for macro policy and promotion of ES&L programs; and the Thailand Industrial Standards Institute (TISI) is responsible for energy performance test protocols and for publishing the MEPS. All of these agencies sit on the ES&L Working Group. *Thailand currently has voluntary energy labeling for refrigerators, air conditioners, brown rice, rice cookers, residential fans, compact fluorescent lamps, and fluorescent lamp ballasts; and*

*MEPS are in place for air conditioners (2005) and will soon be implemented for refrigerators. The GEF support is expected to enhance Thailand's potential of becoming a big regional player in the trading of the abovementioned EE appliances/equipment.*

50. **Vietnam:** The Vietnamese government passed a *Governmental Decree on Energy Conservation and Energy Efficiency (102/2003/ND-CP)* on 3 September 2003. The Decree sets forth the roles and responsibilities for all actors in government and society with respect to energy efficiency. The decree calls for suppliers of energy-consuming equipment and facilities to declare the energy consumption of the equipment in the user instructions and on the labels of such equipment and facilities. After verification, the products will receive an Energy Efficiency Quality Products Certificates and then attach an Energy Efficiency Labels to their products. The Prime Ministerial Decision of the 14 April 2006 approved the *Electricity Saving Program for the period 2006 to 2010*. The Electricity Saving Program authorizes the Ministry of Industry (MOI) to issue Circular guides requiring that suppliers put a label on high-efficiency electric appliances: electric motors, fans, air conditioners, fluorescent-tube lamps (FTLs); and FTL ballasts. Actual technical standards for equipment energy performance will be issued by the Ministry of Science and Technology. The Electricity Saving Program also calls for MOI to develop a road map for replacement of 40 million incandescent lamps with CFLs, FTLs, and T5 lamps. The national utility, Electricity of Vietnam (EVN) has been implementing a national DSM program since 2001, and is currently implementing a national program to distribute 1 million compact fluorescent lamps and thin-tube fluorescent lamps. *While Vietnam has recently issued MEPS for a few products, they have yet to actually begin enforcement, and the GEF assistance will be very useful in this regard. In addition, Vietnam has designed both a comparative and endorsement energy label, but it has not yet developed implementing guidelines for the labels and algorithms for applying them. Without the GEF assistance, it is likely that Vietnam would implement no more than two MEPS and two labeling schemes over the next five years.*

51. The Baseline Scenario will be a continuation of existing ES&L programs with an assumption that future implementation of programs proceeds at the trajectory of the past five years. For most of the participating countries, this means that under the baseline scenario, perhaps one or two new ES&L programs would be added during the five-year period of this BRESL project.

52. Based on studies carried out on ES&L in the region and from the BRESL Survey, the baseline, or business-as-usual (BAU), scenario will most likely be characterized by the following:

- The rate at which MEPS and labeling programs are implemented proceeds at a very slow pace, with most countries (with the exception of China and Korea) implementing only voluntary labeling programs and no more than one MEPS every five years.
- The natural rate of increase in equipment efficiency, will be as follows:

Appliance/Equipment	BAU increase in efficiency (% improvement per year)
Refrigerators	1.0%
Room air conditioners	1.0%
Electric motors	0.2%
Ballasts for FTLs	1.0%
Electric fans	0.5%
Compact fluorescent lamps	1.0%
Rice cookers (1)	0.5%

53. Without the BRESL project, efficiency levels would gradually increase under a Business-as-Usual (BAU) scenario, from 0.2 % to as high as 1% per year, depending on the product.

## **PART II: STRATEGY** (*Expanded Details Contained in Section IV, Part VI*)

### *Project Rationale and Policy Conformity*

54. The proposed GEF-supported alternative to the baseline scenario is intended to reduce greenhouse gas emissions in the participating countries by removing barriers to effective ES&L programs and policies, leading to significantly expanded ES&L programs in the region, thereby substantially reducing energy consumption in the participating countries. Some of the participating countries (e.g., Bangladesh, Indonesia, Vietnam) have limited or no ES&L programs and policies. This project will provide them with the information and assistance needed to develop and begin implementing such programs. Some of the participating countries (e.g., Thailand) have a number of ES&L programs and policies in place. This project will enable them to significantly expand their programs. A few participating countries (e.g., China, Korea) have extensive ES&L programs. This project will enable them to update and expand their programs and will also use their expertise to help mentor other participating countries.
55. The proposed BRESL project aims to facilitate development of efficiency programs in the participating countries through ES&L capacity building and improved harmonization. Harmonization is envisioned to serve the interests of all countries involved, whether more or less advanced in their development of a program. Countries with well-developed ES&L programs for appliances and equipment have an interest in bringing their programs into better alignment for the purposes of promoting free trade. This means that different existing standards are made to agree by modifying the specifications of one or both existing programs. For those that are in the early phase of initiating an ES&L program, harmonization can refer to the selection of procedures and practices from the list of already existing programs throughout the region. In this way, countries can leapfrog and take advantage of well-established successful practices. However, harmonization is likely to be a gradual, long-term process. Due to differences between countries and resistance to changing established procedures, in many cases harmonization will not be easy. This proposed project will begin this long-term project, achieving concrete harmonization progress by project end.
56. With a major focus on capacity building and information exchange, such a regional program will help to collectively eliminate ineffective practices, reduce financial barriers, and strengthen both policy formulation and enforcement. The technical exchange that is envisioned to happen under such a regional initiative will allow for information and expertise to flow more freely across borders within the region. Facilitating regional cooperation will allow the participating countries to appreciate and gain from harmonization, or mutual recognition of energy performance test procedures. Initiating a dialogue between countries will help to lay the groundwork for eventual harmonization. The overall effect of this will be to increase the rate at which energy-efficient products are developed by local manufacturers and suppliers, recognized and supported by government policy, and purchased and used by consumers.
57. This proposed project will include a major focus on working with and assisting individual countries to actually set and begin to implement standards and labels on a menu of targeted products. In this way concrete energy-saving and carbon-reduction benefits will be achieved

during the project period, helping to show participating countries the benefits of ES&L and increasing the likelihood that some project activities will continue even after GEF support ends. This focus on setting minimum standards and implementing labeling programs comes from a survey of participating countries, who asked that this project focus on “doing” and not just capacity building.

58. Based on a survey of participating countries carried out during May 2006, and based on activities elsewhere in the world, the project will focus on six products: (1) refrigerators; (2) room air conditioners; (3) electric motors; (4) ballasts for fluorescent tubes; (5) electric fans; and (6) compact fluorescent lamps. These appliances and equipment account for the majority of electricity consumption in the residential and industrial sectors, and are covered in the national ES&L programs of a number of Asian countries. This list of products was developed during the May 2006 survey and was validated at the Regional Stakeholder Consultation Workshop held in Beijing during 30-31 August 2006. In addition, China will develop a new rice cooker standard as part of BRESL, consulting with Viet Nam and Thailand who also expressed interest in this product (in a vote of participating countries, rice cookers just missed the cut for full-fledged inclusion in the project’s regional activities).
59. The proposed BRESL project will achieve the objective set out in GEF Operational Programme 5, to remove barriers to energy efficiency and energy conservation. It will address the abovementioned barriers, which if not removed will consequently hinder achievement of the desired market transformation for energy-efficient appliances and equipment in the Asia region. The project will involve ongoing and planned ES&L activities of the various countries in the region, as well as incremental activities for removing barriers, in order to achieve the envisioned regional progress in the field of ES&L.
60. The BRESL project, by developing a regional forum and network for dialogue and action on ES&L, will increase the capacity and political will of Asian countries to develop, implement and finance ES&L programs. Ultimately, the outcome will lower energy intensity within countries in the region. The active policy support of the government in these programs will also result in the integration of the principles of sustainability into country policies and programs, in line with the MDG 7 goals. The opening of the markets in the region to increased trade and sale of energy-efficient appliances and products, and the diffusion of technology through technical exchange and demonstration is in line with MDG 8’s mandate to develop an open trading and financial system that is rule-based and predictable and to cooperate with the private sector to make available the benefits of new technologies.

#### *Alternative Scenario*

61. Under the alternative scenario, the participating Asian countries (hereinafter referred to as BRESL countries) will develop a much-improved capacity to design and implement national ES&L programs. Clearly, there is still substantial room for improvement in the ongoing ES&L programs in the countries in the region. As noted earlier, there is little or no ES&L activity in most of the target countries, especially with regard to implementation of the most effective energy-saving policy option – mandatory minimum energy performance standards (MEPS).
62. To achieve the alternative scenario, the proposed BRESL project will involve a serious and sustained effort to expedite and enhance the development of ES&L programs both within and across borders. BRESL will facilitate development of efficiency programs in the participating countries through technical assistance that leads to direct implementation; through capacity building in all aspects of ES&L activities; and through sharing of experience and steps

towards harmonization of energy-performance test procedures, product certification procedures, and product standards. Under BRESL, countries with extensive ES&L experience such as Korea, China (for standards) and Thailand (for labels) will help to mentor other participating countries. Such a regional program will help to collectively eliminate ineffective practices, reduce financial barriers, and strengthen both policy formulation and enforcement. The technical exchange that is envisioned to happen under such regional initiative will allow for information and expertise to flow more freely across borders within the region. Facilitating regional cooperation will allow the participating countries to appreciate and gain from harmonization, or mutual recognition of energy standards & test procedures. Initiating a dialogue between countries will help to lay the groundwork for eventual harmonization. The overall effect of this will be the increased rate at which energy efficient products are developed by local manufacturers, recognized and supported by government policy, and purchased and used by consumers.

63. The Alternative Scenario will be a concerted effort that includes substantial regional cooperation and information sharing but leads to concrete implementation of MEPS and labeling programs for the six targeted products within the five-year duration of the project.
64. The realization of the Alternative Scenario is manifested by and large by the following:
  - Implementation of minimum energy performance standards and energy labeling schemes for all six products in all countries that participate for the particular product.
  - Mandatory MEPS are announced for each of the products at the end of Year 2 and take effect in Year 4 of the BRESL project. The MEPS are expected to lead to an immediate reduction in energy use of 4 to 30%, depending on the product<sup>5</sup>.
  - Mandatory labeling programs are also implemented in each BRESL country, and starting in Year 5, they lead to additional savings beyond the MEPS of 0.4% to 2% annually, depending on the product.
  - Increased utilization of energy efficient appliances/equipment in the commercial, industrial and residential sectors of the BRESL countries.
  - Significant energy savings from the utilization of energy efficient appliances/equipment and the corresponding GHG emissions reduction.
65. The analysis of the Alternative Scenario only models savings for new products being sold – i.e. it does not include efficiency improvements in the existing stock of equipment. In addition, the difference in baseline and alternative electricity consumption does not translate directly to electricity savings attributed to BRESL. This is because electricity savings also include reductions from reduced purchases of incandescent lamps, and these are calculated at 2.75 times the annual unit electricity consumption of CFLs.
66. Table 7 below summarizes the characteristics of the Baseline and Alternative Scenarios and the net project impact in terms of electricity savings (GWh/year) and CO<sub>2</sub> reductions (MMT CO<sub>2</sub> per year, and cumulative). The summaries of estimated energy savings and CO<sub>2</sub> emissions reductions in each BRESL country from the widespread utilization of energy efficient appliances/equipment can be found in Annex D.

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<sup>5</sup> This refers to the impact of MEPS once after it is announced and implemented. Because the manufacturers know that they could receive a penalty, or their product could be banned, if it does not meet the new performance standards, they (at least the international and higher-quality domestic suppliers will shift their product mix toward more efficient models in order to meet the MEPS. The range varies depending on the technical characteristics and ease of efficiency improvements for any one product. For example, a CFL would only experience a small increase in efficiency, and the greatest impact would be on its light quality and lifetime; whereas an air conditioner or refrigerator could see a relatively much larger increase in efficiency.

*Project Goal, Objective, Outcomes and Outputs/Activities*

67. The goal of the project is the reduction of GHG emissions arising from the generation of electricity from thermal power generation units and used in appliances/equipment in the residential, commercial, and industrial sectors of the countries participating in the project. Experience in Asia, as well as in many other countries in the world, is that ES&L programs and policies are one of the most effective ways to improve energy efficiency, and energy efficiency is one of the most effective ways to reduce emissions of greenhouse gases. Specifically, the proposed project will reduce carbon emissions by an estimated 23.4 million metric tons (MMT) per year (cumulative total of about 34.5 MMT) by end of the project. Twenty years after the project end (2031), carbon emissions are projected to be around 268.7 MMT lower each year (cumulative total of about 3,787 MMT), for a reduction of about 9.4% in annual emissions below total 2004 emissions in the participating countries. (See Annex D)

Current (2004) total CO2 emissions for all BRESL countries	2,876 MMT/yr
CO2 emission reductions attributed to the widespread utilization of energy efficient appliances/equipment in 2031 (20 years after project end)	273.5 MMT/yr
CO2 emission reductions attributed to BRESL project in 2031 as % of total CO2 emissions in BRESL countries in 2004	9.5 %

**Table 7: Summary of Expected Results of Baseline and Alternative Scenarios**

Indicator	2007 (Project Start)	2011	2021	2031
Baseline Electricity Consumption (GWh/yr)	515,829	1,071,491	2,419,707	3,768,903
Alternative Electricity Consumption (GWh/yr)	515,829	1,043,691	2,213,317	3,465,867
Electricity Savings (GWh realized in each year)	0	27,799	206,390	303,037
Savings compared to Baseline (% lower than baseline)	0	2.6	8.5	8.0
CO <sub>2</sub> Reductions (MMT/year) (2)	0	24.8	188.1	273.5
CO <sub>2</sub> Emission Avoided (% lower than baseline)	0	2.7	9.4	8.8
Cumulative CO <sub>2</sub> Savings (Total MMT)	0	37.3	1,194.8	3,866.7

68. The objective of the project is the removal of barriers that have persistently hindered the widespread development and application of ES&L programs. These barriers were discussed in Section I above. This project will address these barriers through a combination of training and capacity-building, assessing and transmitting lessons learned, learning by doing, sharing work among countries to reduce the effort needed from each country, and technical assistance. The majority of the project will address barriers that hinder governments from developing and implementing ES&L, but a significant project component will also address project manufacturers and the barriers that can hinder their support for ES&L efforts.

69. A number of outcomes resulting from full project activities are expected. These include:



- New minimum efficiency standards for air conditioners, refrigerators, fluorescent ballasts, CFLs and electric motors adopted in at least 4 countries respectively, reducing energy use for these products by at least 10% relative to business as usual (4% for motors).
  - At least 4 countries adopt new or improved appliance and equipment energy efficiency labeling schemes.
  - ES&L programs are operating by project end in all participating countries, with plans in place to continue these programs after the GEF project ends.
  - Regional coordination on ES&L makes it easier for all countries to develop and maintain ES&L efforts and countries elect to continue this coordination after the GEF project ends.
  - A majority of appliance/equipment manufacturers in the region recognize the benefits of, and opportunities for, ES&L efforts to increase their profits.
  - Mutual recognition agreements and product certification and posting procedures in place so testing and certification in one country generally meets requirements in other countries, easing burdens on manufacturers and promoting regional trade.
  - Increased market share of EE equipment/appliances in the different countries and in the region as a result of the ES&L programs.
  - Energy savings from the utilization of energy efficient appliances/equipment in the end use sectors in each participating country.
70. The proposed project focuses on building capabilities and interest to pursue ES&L efforts in each of the participating countries, and then using these capabilities to help participating countries set and implement standards on six target products (air conditioners, refrigerators, three-phase electric motors; compact fluorescent lamps (CFLs); fluorescent ballasts and residential fans). In addition, as noted above, several countries will develop new standards on rice cookers. The heart of the project is six regional product-specific working groups that will conduct and oversee technical work that develops model test procedures, standards, and voluntary labeling levels for each targeted product. These model standards will include multiple levels (tiers) in order to fit the needs of different countries. In this way, some of the more advanced countries can adopt more stringent tiers while countries just starting ES&L programs can adopt less stringent tiers. By working together, workloads can be shared, expenses reduced relative to each country doing their own independent analysis, and standards harmonized (same procedures and formats, with a limited number of actual levels in place). Harmonization on standards will encourage regional trade.
71. The many standards put in place through this project will transform regional markets for targeted equipment, substantially raising efficiency levels. In addition, the labeling schemes put in place will promote purchases of even higher efficiency products, creating a significant market for efficient products in the region.
72. The proposed project will involve a mix of regional and national activities. Countries will work together on training, technical analysis, compilation of reports on lessons learned, development of model standards and procedures, and regular consultations with each other. Individual countries will then use these regional outputs to develop and implement their own standards and labels. In addition, each country will conduct a few pilot projects to address country-specific needs.
73. The proposed project is comprised of five major components consisting of complementary activities designed to remove barriers to achieve the project objectives. A separate component on project management is also included.
- ES&L Policy-Making Program: Establishment of legal basis for standards and labels and assisting with the development of regulations for the targeted products.

- ES&L Capacity Building Program: 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 Program: 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 Program: Regional cooperation activities that will aid individual countries with development and implementation of their ES&L programs 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 programs, including support activities that build on the regional foundation provided by BRESL. This will include a number of activities implemented at the national level, with coordination across the region, including initial work on regional harmonization led by China.

74. The following paragraphs describe the various major activities and sub-activities under each project component. Note that in the following tables that present the various sub-activities, the “*Country*” column refers to the country or countries where the sub-activity (national) will be implemented. In the case of regional sub-activities, this column refers to the beneficiary countries (i.e., the BRESL countries) of the sub-activity. The “*Responsible Entity*” column refers to the institution/agency (and where relevant, also the project partners, i.e., those in-charge of the co-financed and/or baseline activities) in each country that is responsible for the implementation. In the case of regional activities, this column refers mainly to the regional project management unit (and in some cases, together or in coordination with the relevant project partners). It should be noted also that in some cases, as agreed during the Regional Stakeholders’ Consultation Meeting in August 2006, a specific country (or countries) will also implement supplementary sub-activities.

Each country that will carry out supplementary sub-activities will develop specific work plans for such including an appropriate monitoring and evaluation plan. The results of such sub-activities will also be shared to the other countries.

### **Component 1: ES&L Policy-Making Program**

75. This component will include several activities to put in place new laws and regulations enabling and establishing equipment standards and labels. The focus here is to establish a legal and regulatory foundation for ES&L in each of the participating countries. This will include providing information and TA to countries without ES&L enabling authority in place so they can pass necessary enabling laws or regulations, and will also include providing information and TA to participating countries so they can adopt new standards and labels for the six targeted products. Lack of enabling regulations is a key barrier in five of the seven participating countries. In addition, this component will include information and TA on standards and labeling implementation, in order to maximize compliance with ES&L regulations. By working together to establish new standards and labels on the six targeted products, substantial and concrete benefits will be achieved. In addition, documentation of these benefits will help to build support for continued ES&L activities in each of the participating countries. For example, a country achieving substantial benefits from initial standards is more likely to allocate money out of national budgets to continue ES&L activities. In our survey of participating countries, one clear message we received was they want this project to focus on standard-setting actions and not just training and other enabling activities. This project component addresses this need.

76. **Activity 1.1: Strengthening of the Policy Context for Energy Standards and Labels:** Most of the BRESL countries lack enabling legislation or regulations to establish ES&L programs. The following are the proposed sub-activities that will be carried out to address such barrier/constraint. These will be mainly implemented at the national level:

Sub-Activity	Country	Responsible Entity
Compilation of ES&L policy and feasibility studies by experts in each country to assess the current situation and options for going forward.	All	Designated Implementing Partners (DIPs) <sup>6</sup>
Provision of information (e.g., sample laws from the region) and technical assistance to each country to support the government in: (1) Developing draft ES&L legislation, rules and regulations; and, (2) Adopting and enforcing laws, rules and regulations.	All	DIPs, Energy Foundation (China)
Creation, definition of mandate and functions, mobilization and operationalization of an ES&L Inter-Agency Committee whose members are from the various key stakeholders/players in the area of ES&L <sup>7</sup>	All	Country Teams (CTs) <i>in coord. with</i> DIPs
Provision of technical advice in the review of, and formulation of relevant recommendations to a proposed ES&L Legislation, and will include conduct of stakeholder consultation meetings, ES&L law analysis, drafting of implementing rules and regulations, and lobbying of the energy department/ministry and ES&L stakeholders. <sup>8</sup>	All	CTs <i>in coordination with</i> DIPs
<u>Supplementary:</u> Development of an ES&L policy model, which will involve: (1) Institutional review of institutional structures for organizing and managing DSM and end-use efficiency projects in Asian (and other) countries; (2) Review of mandatory labeling schemes in other Asian (and other) countries; (3) Development of a plan to introduce mandatory comparative energy labeling along with an endorsement labeling scheme; (4) Design of institutional structure and mandatory labeling program; (5) Study tour of senior policymakers to the best practice country and development of an integrated ES&L policy model. <sup>9</sup>	Thailand	DEDE

<sup>6</sup> The Designated Implementing Partners are as follows: Bangladesh - Bangladesh Standards & Testing Institute (BSTI); China - National Development and Reform Commission (NDRC); Indonesia - Directorate General for Electricity and Energy Utilization (DGEEU); Pakistan – Ministry of Energy; Thailand - Department of Alternative Energy Development and Efficiency; and, Vietnam - Ministry of Industry (MOI).

<sup>7</sup> This is to facilitate the enactment and the strict and proper enforcement of the ES&L legal frameworks. The proposed Committee will regularly coordinate and report on ES&L policy issues related broadly to policies within the country's energy, industry and financial sectors. The Committee is tasked primarily with the monitoring of impacts of policy implementation and coordinates the revision and improvement of policies as necessary in accordance with the sustainable energy goals/objectives of the country. The M&E plan that will be used and implemented will be based on the baseline, targets, means of verification and assumptions that were agreed upon in the BRESL's project planning matrix (See Table 14, Component 1).

<sup>8</sup> Consultations with different stakeholders particularly the private sector to capture their true sentiments about the major concerns that must be addressed by the proposed legislation and its implementing rules and regulations to facilitate ES&L development and implementation.

<sup>9</sup> The outputs will include two international review reports, a policymaker study tour, a policy paper on integrated ES&L policy model, a mandatory labeling program for consideration by the Thai government,

Sub-Activity	Country	Responsible Entity
<u>Supplementary:</u> Provision of technical assistance to national and local government authorities on policy formulation and impact analysis of ES&L schemes, as well as on the planning, implementation and evaluation of ES&L programs, and design and implementation of incentives for EE product importers and manufacturers	Indonesia	DGEEU

77. All of the abovementioned activities will be done at the direction of the government in each country and will respond to each country's specific needs. Each country will provide government personnel to work on this activity. *GEF support is required for the technical assistance in the feasibility studies and policy and regulations/laws implementation and for provision of information.*

78. **Activity 1.2: Adoption and Implementation of Energy Standards and Labeling Regulations:** This major activity will involve providing information and assistance to individual countries to help them adopt standards and labels on the six products covered by the project.

Sub-Activity	Country	Responsible Entity
Provision of technical assistance in adopting energy efficiency standards and labels on the 6 BRESL products <sup>10</sup>	All	DIPs, Others (EF, ICA) <sup>11</sup>
Provision of technical assistance in the development and enforcement of the implementation plans for the adopted standards and labels <sup>12</sup>	All	DIPs
Provision of information on all specific actions that were successfully implemented in other countries that ensured the strict and proper enforcement of the ES&L policies and associated legislation and legal framework will be shared to each BRESL country.	All	CTs in coord. with DIPs, KEMCO
Evaluation of the applicability of proven successful measures in countries in other regions to enforce ES&L programs (e.g., N. America, Europe, Japan, Australia/NZ, Taiwan, S. Korea)	All	CTs in coord. with DIPs, KEMCO
Provision of technical assistance in the design and piloting of feasible ES&L program enforcement measures <sup>13</sup>	All	CTs in coord. with DIPs
<u>Supplementary:</u> Capacity development of policy makers and stakeholders at the central and provincial level in the area of	Pakistan	MOE

including the proposed implementing rules and regulations. The project will help facilitate the eventual implementation of the mandatory labeling program.

<sup>10</sup> This work will use the outputs of Activities 2.2 and 3.1, as well as information from countries that have previously adopted standards (e.g., North American, European, Japanese, etc) to assist individual countries to adopt standards and labels on the covered products, and then to develop and follow implementation plans for the standards and labels adopted. Included in the implementation plans will be outreach to product retailers.

<sup>11</sup> TA for China from Energy Foundation; TA on ES&L for motors and air conditioners for Bangladesh, China and Vietnam from International Copper Association.

<sup>12</sup> The Inter-Agency Committee in each country (Activity 1.1) will help ensure that proper enforcement of ES&L policies and programs are carried out. This Committee is tasked to be the ES&L "watch dog"; monitoring the administrative, regulatory and legal aspects of the national ES&L program implementation. The M&E plan that will be developed for use of the Committee will also cover the results and impact monitoring (e.g., resulting energy savings) of adopted standards and labeling programs. (See Table 14, Component 1)

<sup>13</sup> This can involve modifying proven successful measures (e.g., "manufacturers challenge") in countries in other regions to enforce ES&L programs to fit each country's circumstances.

Sub-Activity	Country	Responsible Entity
ES&L policy formulation, program development and implementation, including regional trading of EE equipment/appliances.		
<u>Supplementary:</u> Extensive capacity building and technical assistance activities covering specific aspects of ES&L, such as: (1) Updating of existing ES&L programs including the formulation of implementing rules & regulations; (2) Enhancement of ES&L work (development and implementation) done on the 6 BRESL products; (4) Development of an accreditation program for appliance testing laboratories in existing factories (energy performance testing capability, staff technical skills upgrading, and facility R&D capacity upgrading); and, (5) Tool development such as impact assessment methodology, data survey protocols, and program evaluation protocol.	Indonesia	DGEEU

79. Each BRESL country will provide government personnel to work on the implementation of this major activity. *GEF support is required for the necessary technical assistance on the development, adoption and implementation of energy efficiency standards and labels for appliances, and in the development and piloting of ES&L program enforcement measures.*

#### Component 2: ES&L Capacity-Building Program

80. This component will address several barriers including lack of technical know-how on ES&L, lack of institutional capacity on ES&L implementation, absence of adequate information on appliance and equipment efficiency and trends and limited local energy performance testing facilities. This component will include several key activities to build capacity for developing and implementing energy standards and codes including staff training, establishment of product-specific working groups, provision for adequate testing facilities, establishment of regular data collection and reporting processes, and facilitation of mutual recognition agreements so that equipment tested and certified in one country does not need to be retested and recertified in other BRESL countries.

81. **Activity 2.1: Training to Strengthen and Enable Public Institutions to Support Development and Implementation of ES&L Programs:** This activity will involve training courses for officials and consultants involved with ES&L development and implementation on standard and labeling processes, technical content, implementation and related issues. These courses will emphasize practical experiences in the region (e.g., Japan, S. Korea) as well as in other regions (e.g., USA) and lessons learned. These courses will be given at several locations in the region and will be designed to make sure that all personnel working on the project have a common basis of knowledge upon which they can build by participating in other project activities. These courses will build on material developed previously by CLASP.

Sub-Activity	Country	Responsible Entity
<b>National</b>		
Conduct of detailed gap analysis and capacity need assessment on ES&L development, implementation and enforcement	All	CTs <i>in coord. with</i> DIPs
<u>Supplementary:</u> Conduct study visits in other countries to study the successful experiences in ES&L program development &	Pakistan	MOE

implementation and methods of its dissemination/adoption.		
<b>Regional</b>		
Review and verification of capacity needs of BRESL countries on ES&L development, implementation & enforcement	All	Regional PMU, EF, ICA, KEMCO
Design of training materials based on capacity needs assessment	All	Regional PMU
Organization and conduct of training courses	All	Regional PMU
Evaluation of the impacts of the training courses	All	Regional PMU

82. *GEF support is required for the in-country capacity needs assessments and for updating and customizing the ES&L training material for regional needs, as well as for organizing, delivering and evaluating the training courses.*

83. **Activity 2.2: Capacity Enhancement in the Development and Implementation of Standards and Labeling for the 6 Targeted Products:** This activity will involve establishment of working groups for each of the six targeted products and the development of model test procedures, standards and labeling programs for each product by its respective working group. The intent is to develop a body of common information and approaches each country can use to set standards and labels that will also consider ES&L policies and programs that are in place in countries such the USA and Japan. This is to make adoption easier in individual countries and also bring a degree of harmonization to standards & labels in the region. This is in line with the laying of groundwork for the planned regional harmonization.

Sub-Activity	Country	Responsible Entity
<b>National</b>		
Development of new set of standards for rice cookers – This will involve: (1) Conduct of research on opportunities and costs for improving the efficiency of rice cookers; (2) Development of a new standard and endorsement label for rice cookers; (3) Publication of report on the rice cooker standards for dissemination to other countries. <sup>14</sup>	China	NDRC/CSC
Conduct of initial work on the development of proposed Harmonized Test Protocols, Certification, Accreditation and Compliance Regimes for 6 BRESL products. <sup>15</sup>	China, Indonesia	NDRC/CSC (China), DGEEU (Indonesia)
<b>Regional</b>		
Establishment of 6 Technical Working Groups (TWGs), one for each BRESL product. <sup>16</sup>	All	Regional PMU, DIPs
Development of model test procedures, standards and labeling programs for each product by each respective technical working	All	TWGs, CFL-HI, KEMCO

<sup>14</sup> This is in addition to the 6 core BRESL products. As part of this activity, China will consult with Thailand and Viet Nam (both of whom have expressed interest in rice makers) in the hope that they can use the new Chinese standard to help set new standards and labels for their countries. Many rice makers sold in the region are produced in China, so even a China-only standard is likely to produce some energy savings in other countries. The prime output will be a new Chinese standard, including an updated specification for their endorsement label.

<sup>15</sup> This is in addition to the work carried out by the TWGs, and will complement the regional work on harmonization in Component 4.

<sup>16</sup> Unlike other ES&L projects in the region, these working groups will be very technical, with each one devoted to a specific product. Other regional groups are much more strategic and do not get into specific technical details of regional harmonization of test procedures and standard levels.

Sub-Activity	Country	Responsible Entity
group (TWG). <sup>17</sup>		
Conduct of regional consultation meetings to deliberate on the outputs of the TWGs.	All	TWGs, Regional PMU
Publication and dissemination of proposed model test procedures, standards and labeling programs.	All	TWGs, Regional PMU

84. *GEF support is required for the administration and facilitation of the tasks that will be carried out by the working groups, including travel costs to working group meetings, and documentation of technical reports produced, as well as in the technical assistance for the supplementary initial work that China and Indonesia will be doing on regional harmonization.*

85. **Activity 2.3: Strengthening of National and Regional Testing and Certification Infrastructure:** This major activity is meant to address the barrier related to the inadequate capacity of testing and certification facilities and programs in the region. It involves the implementation of the national and regional technical assistance and capacity development sub-activities tabulated below:

Sub-Activity	Country	Responsible Entity
<b>National</b>		
Conduct of survey on testing and certification facilities and programs in the region, identification of gaps, and development and implementation of a plan to fill these gaps.	All	CTs/DIPs, Others (EF, ICA, CFL-HI)
Review of existing ES&L technical capacity (manpower, equipment, facilities and techniques/procedures) and capacity needs for appliance/equipment testing.	All	CTs/DIPs
Evaluation of the opportunities for utilization of test facilities by other countries. <sup>18</sup>	All	CTs/DIPs, Others (EF, ICA, CFL-HI)
Evaluation of the legal, logistical and technical requirements for the implementation of future harmonized test procedures, compliance to established mutual-recognition agreements and posting of certification data.	All	CTs/DIPs
Implementation of feasible capital improvements on ES&L testing facilities. <sup>19</sup>	All	CTs
<u>Supplementary:</u> Development and implementation of a market monitoring system for ES&L that involves sampling random products and testing for compliance with standards and accuracy of labels. <sup>20</sup>	China	NDRC/CSC

<sup>17</sup> These models will include multiple tiers and options for consideration by individual countries. These tiers and options will be needed to serve the different needs of different countries.

<sup>18</sup> This is for facilitating the use of test facilities in one country to help serve testing needs in other countries, at least until test facilities can be established in all participating countries.

<sup>19</sup> Capital improvements will be funded by host countries, by national trade associations, or local manufacturers wherever possible. This forms part of the co-financing from each BRESL country.

<sup>20</sup> This sub-activity will involve a survey of international experience and best practices, develop a detailed market monitoring scheme, develop a sampling methodology, and conduct some market monitoring tests. The outputs will include a detailed market monitoring scheme; a product sampling scheme; results of product sampling tests, and an interim and final report on the activity.

Sub-Activity	Country	Responsible Entity
<u>Supplementary</u> : Development of testing capabilities, and the development of standards and labels for other major appliances/equipment	Indonesia	DGEEU
<b>Regional</b>		
Conduct of round robin testing	All	Regional PMU & CTs/DIPs, CFL-HI <sup>21</sup>
Provision of technical assistance in the design of capital improvements on ES&L testing facilities, based on the findings and recommendations of the round-robin testing and in-country ES&L technical capacity assessments.	All	Regional PMU & CTs/DIPs
Documentation and dissemination of the results and recommendations of the round robin testing.	All	Regional PMU & CTs/DIPs

86. *GEF support is needed for the survey on testing and certification facilities and preparation of recommendations, for provision of technical assistance in the harmonization of test procedures and the establishment of mutual recognition agreements and procedures, and in the performance of the regional round robbing testing.*

87. **Activity 2.4: Strengthening of Data Collection and Reporting Procedures on Equipment Availability and Sales by Efficiency Level in Participating Countries:** ES&L programs rest on a foundation of data on equipment energy use and how this use is changing over time. Such data are needed to set standards and to monitor standard implementation and benefits. Currently, the available data are fragmented as they are collected and reported by various institutions in each country (sometimes in different institutions within the country). This activity will involve developing a simple model data collection and reporting procedures, based on successful efforts in the region, and provision of technical assistance to countries that now lack such procedures, so they can adopt such procedures.

Sub-Activity	Country	Responsible Entity
<b>National</b>		
Evaluation of the applicability of the model data collection and reporting procedures	All	CTs/DIPs
Modification (if necessary) of the model data collection and reporting procedures suited to the data requirements and protocols, data availability, as well as the planned/established harmonization requirements in the country <sup>22</sup>	All	CTs/DIPs
Implementation of the data gathering and reporting procedures <sup>23</sup>	All	CTs/DIPs

<sup>21</sup> TA for round robin testing of CFL testing facilities in all BRESL Countries from CFL Harmonization Initiative.

<sup>22</sup> The data survey and reporting model will be shared with the BRESL countries, who will be encouraged to use it and to report annually to the BRESL Steering Committee. While the data model will be a foundation for this work, there are likely to be variations from country to country to match local needs and capacities, it is important that there be a consistent set of core data for regional comparisons and benchmarking.

<sup>23</sup> There will be 2 sub-activities that will be carried out by each BRESL country in order to monitor their respective EE appliance/equipment market. These 2 sub-activities make up the monitoring scheme for the local and regional EE appliance/equipment markets in Asia. As per the designed data survey and reporting forms, the scheme will involve the monitoring of the prices, sales volume, and availability of the different types and brands of EE appliance/equipment (particularly BRESL products) sold in the market, and their corresponding market



Sub-Activity	Country	Responsible Entity
<b>Regional</b>		
Collection of available energy performance and energy-use benchmark data for appliances and equipment from overseas appliance/equipment manufacturing organizations and/or research institutions that are engaged in the promotion of energy efficient appliances/equipment <sup>24</sup>		
Design and development of the model data collection and reporting procedures. <sup>25</sup>	All	Regional PMU

shares. Also, information on the typical energy efficiency performance of the different EE appliance/equipment will also be gathered, evaluated and reported. The data gathering and reporting system (including the implementation guidelines) will be instituted as part of the regular activities of the designated BRESL implementing partner to ensure sustainability of the process.

**A. EE Appliance/Equipment Survey:** This will include the implementation of the following tasks: (1) Coordination of the data survey with the appliance/equipment trade association and possibly the local consumer associations; (2) Distribution of the data survey forms (mail shots and through the internet); (3) Conduct of "on-the-spot" surveys of appliance/equipment sellers and traders in major cities to directly gather information using the data survey/gathering form; (4) Processing and assessment of the survey returns; and, (5) Reporting of data survey results and analysis.

**B. EE Appliance/Equipment Manufacturing Reporting:** This will include the implementation of the following tasks: (1) Coordination of the reporting with the appliance/equipment industry association; (2) Distribution of the data reporting forms (mail shots and through the internet); (3) Conduct of visits to pre-selected appliance/equipment manufacturing firms (e.g., those that requested assistance in filling up the report forms, those that have various production lines; and, those presently complying with certain corporate energy use benchmarks); (4) Assessment of the completed reports; and, (5) Preparation of the synthesis report, which includes the analysis of the reports.

<sup>24</sup> In cooperation with the Country Teams, the Regional PMU will organize and conduct a literature review of the energy performance, sales and saturation rates of various appliances/equipment, particularly the BRESL products, in both developed and developing countries.

<sup>25</sup> The Regional PMU will develop the data collection and reporting formats that will be used for the EE market monitoring in each BRESL country. These will be used to collect data on the production, sales, and energy performance of EE appliance/equipment in each BRESL country. The historical and current data that will be collected will be used in establishing a more detailed picture of the EE appliance/equipment market in the region (e.g., market share, saturation rates). These data will also be used in forecasting average efficiency and sales volumes and saturation rates of EE appliance/equipment in each country in the region. There will be 2 sub-activities:

**a. Design of a model survey and/or data collection form that will be used for in-country appliance/equipment market monitoring** – Based on the availability, type and nature of the data gathered from each BRESL country, a model survey and/or data collection form will be designed for use in the monitoring of the EE appliance/equipment markets in each country. The model will be designed in such a way that it will facilitate the gathering of data parameters that can be used in forecasting the local and regional EE appliance/equipment market performance, as well as in assessing the average energy performance of EE appliance/equipments. Such model will be made flexible enough to allow modification by each country in order to adapt to specific data gathering requirements. Detailed and annotated guidelines will be prepared and distributed along with the data survey/collection form to local appliance/equipment sellers and traders.

**b. Design of a model reporting form that will be used by local appliance/equipment manufacturing and distributing firms in reporting regularly the production, sales volumes and energy performance (based on laboratory QC reports) of the products that are locally produced and sold in the local and export markets.** The model reporting form will be designed by the Regional PMU and will be distributed to the various national teams in the BRESL countries. The form will be designed to include information on the production of the appliance/equipment (particularly the BRESL products) such as production rates (by product, size), average energy performance (by product), reject rates, manufacturing costs, etc, as well as market information supply and sales rates. The reports will be used in establishing appliance/equipment energy performance standards in each BRESL country. The reporting format will be made flexible enough to allow modification by each country

Sub-Activity	Country	Responsible Entity
Promotion of, and where required, provision of technical assistance in the use of, the model data collection and reporting procedures <sup>26</sup>	All	Regional PMU
Conduct of a regional meeting to initiate the use of the data survey and reporting forms and procedures/guidelines	All	Regional PMU
Consolidation and synthesis of the information gathered and monitoring results evaluated by each BRESL country annually. This is for reporting the annual regional EE appliance/equipment market performance.	All	Regional PMU
Follow up on the application of the reporting model and doing any necessary adjustments on the regional data reporting procedures.	All	Regional PMU

88. This major activity on data collection and monitoring will be in line with the data banking requirements needed to support the regional harmonization efforts. *GEF support is needed for the technical assistance and facilitation of the development and application of the procedure.*

### Component 3: ES&L Manufacturer Support Program

89. This component has been primarily designed to address the barrier that manufacturers are often distrustful of standards and labels, and their objections can delay ES&L efforts or result in weakening of standards. During the Regional Stakeholder Workshop in August 2006, it was agreed that this manufacturer-related barrier is generic across the region, but must be dealt with in the context of each national economic and cultural setting. Therefore the activities will be carried out separately within each country, but with the sharing of lessons learned at the regular regional BRESL meetings being an important part of the component design. The activities under this component will include the provision of information to manufacturers on ways to improve product efficiency at modest cost; training on ways to use ES&L programs to increase profitability; and technical assistance to individual local manufacturers on these issues.

90. **Activity 3.1: Product Technical Analysis and Reports:** This is a regional activity that will be supported by all BRESL countries. It basically involves the preparation of a set of six reports (one per targeted product) on ways to improve product efficiency and the costs involved (including capital and product variable costs).

Sub-Activity	Country	Responsible Entity
Desk review of the energy performance of existing brands of the 6 BRESL products in each country.	All	Regional PMU & CTs/DIPs, Others (EF, ICA, CFL-HI)

*in order to adapt to specific reporting requirements. Furthermore, the reporting requirements will also include measurement/determination of parameters that will be used in establishing appliance/equipment manufacturing industry-wide energy-use benchmarks. Detailed and annotated guidelines will be prepared and distributed along with the reporting form to appliance/equipment manufacturers and distributors (importers/exporters).*

<sup>26</sup> This is part of the capacity building in the M&E of the BRESL project, as well as on the national and regional EE appliance/equipment market monitoring scheme.

Sub-Activity	Country	Responsible Entity
Conduct of visits to selected local manufacturing plants in the BRESL countries to assess designs and production processes today, and opportunities for improvements. <sup>27</sup>	All	Regional PMU & CTs/DIPs, Others (EF, ICA, CFL-HI)
Preparation of a report on the product energy efficiency performance of products evaluated. <sup>28</sup>	All	Regional PMU & CTs/DIPs
Preparation of a report on recommendations for improving product efficiency, including costs involved. <sup>29</sup>	All	Regional PMU & CTs/DIPs
Publishing of the consolidated report on the 6 BRESL products, and dissemination to local appliance & equipment manufacturers in the BRESL countries. <sup>30</sup>	All	Regional PMU & CTs/DIPs

91. This major activity will assist in ensuring that local manufacturers comply with enforced implementing rules and regulations of the national ES&L programs. The reports will also encourage consumers to use energy efficient appliances, and make them aware of the benefits of such products. *GEF support is required for the technical assistance in preparing the reports, including logistics needed for data gathering.*

92. **Activity 3.2: Educational Workshops for Manufacturers and Retailers on Impacts of Standards on Manufacturers and Retailers and Ways to Work with Standards to Increase Profitability**: This activity will involve holding one-day training programs for manufacturers and retailers on how standards and labels can affect them and ways to use standards and labels to increase profitability. These will be held in each BRESL country, with the provision of technical expertise facilitated by the Regional PMU.

Sub-Activity	Country	Responsible Entity
<b>National</b>		
Evaluation of current (if any) ongoing and/or planned advocacy campaigns on ES&L, from manufacturers, retailers and consumers	All	CTs/DIPs
Evaluation of the feasibility of ES&L program implementation both at the national perspective and the local appliance/equipment manufacturers' standpoint	All	CTs/DIPs
Evaluation of potential financial benefits to manufacturers and retailers (and possibly potential financiers) of an effectively enforced ES&L program	All	CTs/DIPs
Evaluation of potential market strategies to use ES&L efforts to "up sell" to higher value, higher profit products	All	CTs/DIPs
<b>Supplementary:</b> Conduct of special study on impacts of high oil prices on the pricing of energy efficient equipment/appliances	Pakistan	MOE
<b>Regional</b>		
Design of the ES&L workshop program	All	Regional

<sup>27</sup> The BRESL products that will be evaluated are only those that each country will specifically be working on under the BRESL Project. Note that only Thailand and Vietnam will work on all 6 BRESL products.

<sup>28</sup> This maybe shared with the local manufacturing plants that were visited.

<sup>29</sup> This maybe shared with the local manufacturing plants that were visited.

<sup>30</sup> These reports will be used in activity 1.2 and will also be provided to manufacturers so they can have information on ways to improve the efficiency of their products.

Sub-Activity	Country	Responsible Entity
		PMU, Others (EF, ICA, CFL-HI)
Organization and conduct of the workshops	All	Regional PMU
Evaluation of the impacts of the workshops	All	Regional PMU

93. The workshops will review implementation experience in several countries, including actual costs of compliance which are generally much less than pre-effect date perceptions of the costs of compliance. One workshop will be conducted for each country. The workshops will include examples from the region and elsewhere. *GEF support is needed for required research work for use in the design of the workshop program and to organize and conduct the workshops.*

94. **Activity 3.3: Technical Assistance to Manufacturers:** This major activity will involve the provision of a limited amount of technical assistance to selected local manufacturers of the 6 BRESL products as identified by the participating countries. *GEF support is need for the required technical assistance that will be provided to local appliance manufacturers, including for the evaluation of potential improvements and efficient designs for locally made BRESL products, as well as the capacity building to be provided for banking/financial institutions that can fund production improvement projects of these manufacturers.*

Sub-Activity	Country	Responsible Entity
Selection of local manufacturers of each BRESL product that will be provided technical services under the project <sup>31</sup> , based on a set of selection criteria that will be developed and used in the selection process	All	CTs/DIPs
Conduct of plant walkthroughs to evaluate the existing manufacturing operations and processes, and provision of advice/recommendations on: (1) the processes and equipment needed to improve and upgrade appliance/equipment design and production technologies; (2) Preparation of business plans and project proposals for financing; and, (3) Linking with funding institutions, banks and other financial intermediaries for sourcing of funds for facility and production improvements to accommodate energy efficient product manufacturing.	All	CTs/DIPs, Others (EF, ICA, CFL-HI) <sup>32</sup>
<u>Supplementary:</u> Provision of capacity building for financial institutions to encourage them to provide financial support to ES&L and EE product manufacturing projects of local manufacturers <sup>33</sup>	Bangladesh	BSTI

<sup>31</sup> This is about 2 to 3 manufacturers of each BRESL product in each country, or approximately 60 local manufacturers.

<sup>32</sup> TA for local appliance manufacturers in China from Energy Foundation; TA for local manufacturers in Bangladesh (motors & air conditioners), in China (motors and magnetic ballasts), and Vietnam (motors) from International Copper Association; and TA on CFLs from CFL Harmonization Initiative.

<sup>33</sup> Expected outcome is increased investments in plants and production lines to produce energy-efficient equipment.

Sub-Activity	Country	Responsible Entity
<u>Supplementary</u> : Development of a voluntary agreement scheme with selected local appliance/equipment manufacturers <sup>34</sup>	China, Indonesia	NDRC/CSC (China), DGEEU (Indonesia)
<u>Supplementary</u> : Conduct of negotiations with local banking/financing institutions on financing arrangements for energy efficient equipment/appliance suppliers (importers and manufacturers)	China, Indonesia	NDRC/CSC (China), DGEEU (Indonesia)

#### Component 4: ES&L Regional Cooperation Program

95. This component is intended to help countries to learn from one another so they can emulate successful efforts and avoid repeating mistakes that others have made. An activity to plan for follow-up activities when GEF funding ends will also be carried out. This is to ensure that regional cooperation and progress and standards can continue. The following are the specific activities under this component:
96. **Activity 4.1: Project Web Site:** This regional activity will develop a project web portal so that information compiled by the project can be posted and available to all. This web portal will build on the existing APEC ESIS web site ([www.apec-esis.org](http://www.apec-esis.org)), which is intended to serve as the repository for ES&L information related to this GEF project and to accommodate information intake and dissemination related to the harmonization work that will be carried out.

Sub-Activity	Country	Responsible Entity
Enhancement of the APEC-ESIS web site <sup>35</sup>	All	Regional PMU
Conduct of training for country officials and experts on how to place updates on their national programs directly into the APEC-ESIS web site	All	Regional PMU & CTs, AGO, CLASP
Evaluation of the impacts of the project website	All	Regional PMU

97. *GEF support is required to develop the project web portal and to support development of national portals for the participating countries.*
98. **Activity 4.2: Lessons Learned Reports:** This regional activity will involve the documentation of all relevant lessons (successes and shortcomings) that were learned in the development, implementation and enforcement of ES&L programs/projects. A series of concise “lessons learned” reports will be prepared to address important ES&L issues identified by participating countries.

<sup>34</sup> Manufacturers will be selected based on the assessment of their capabilities to produce EE products. They will also be provided advice on potential improvements and efficient designs for locally made EE products to make them compliant to MEPS).

<sup>35</sup> The benefit of this arrangement is that it would enhance an existing resource – APEC ESIS – which is the primary international database of record for the status and basic information on ES&L programs. Major portions of the web portal will be public, but some components will be password protected so that non-public information can be shared. This website will not replicate information that is already available on the web and instead will include extensive linkages to other websites and websites for national ES&L programs. Each participating country will have a portal for overview country information.

Sub-Activity	Country	Responsible Entity
Conduct of interviews with program administrators in the region as well as in other countries (e.g., USA, Japan, & EU).	All	Regional PMU, EF, ICA, CFL-HI
Preparation of the "lessons learned" reports <sup>36</sup>	All	Regional PMU
Publication and dissemination of the "lessons learned" reports in Year 1	All	Regional PMU
Analysis of each country's overall perceptions or views, work completed and planned, and expectations for the regional harmonization efforts <sup>37</sup>	All	Regional PMU
Revision of "lessons learned" reports in Year 4 <sup>38</sup>	All	Regional PMU

99. *GEF support is required for the preparation (interviews, researches and analyses), publishing and dissemination of the relevant reports.*

100. **Activity 4.3: Regional Energy Efficiency Standards and Labeling Network:** This major activity involves the design and establishment of a Regional Energy Efficiency Standards and Labeling Network (REESLN), which builds on the start-up work funded through the end of 2007 by APEC<sup>39</sup>.

Sub-Activity	Country	Responsible Entity
<b>National</b>		
Initiation work on a regional ES&L information sharing network (in line with Activity 4.1), which will facilitate the gathering and consolidation of information to be uploaded in the Project Web Site <sup>40</sup>	Indonesia <sup>41</sup>	DGEEU in coordination with Regional PMU
<b>Regional</b>		
Enhancement of the APEC's REESLN (also to establish links with countries with ongoing ES&L programs such as the Energy Star Program – USA; and Top Runner Program - Japan).	All	Regional PMU, CLASP, AGO
Conduct of training workshop on the REESLN operations, in particular on the sharing of ES&L experience under the numerous GEF-assisted ES&L programs in the various geographic regions.	All	Regional PMU, CLASP, AGO

<sup>36</sup> Based on the BRESL Survey, the following could be the topics for the reports: (a) Evaluation of ES&L program implementation in each country; (b) Policy-frameworks for ES&L programs; (c) Test procedures and test laboratories; (d) Standard and label implementation and enforcement; (e) Complementary efforts to promote efficient products including ES&L promotion (including outreach to retailers), Incentive schemes for high-efficiency equipment, Government procurement schemes targeted at high-efficiency equipment; and, (f) Work done in-country and collectively in the region on the harmonization efforts.

<sup>37</sup> Results and recommendations of the analyses will be used in aligning or if necessary, redirecting the collective efforts to achieve the regional ES&L harmonization objectives.

<sup>38</sup> This is to take advantage of additional lessons gleaned from BRESL project evaluation reports.

<sup>39</sup> APEC is funding the start-up of a regional network on energy-labeling, with work continuing through the end of 2007. BRESL funds will be used to continue this and expand this network to include standards and to continue operations from 2008 until the end of the BRESL project.

<sup>40</sup> This will include information sharing regarding ES&L conference announcements and papers, journal articles, media communications, success stories, best practices, etc.

<sup>41</sup> Indonesia will carry out and lead this activity in coordination with the other BRESL countries.

101. This particular activity places emphasis on the importance of enhancing cooperation regionally and internationally, and not just within the 6 BRESL countries (including ROK). Through the Regional Project Steering Committee, the project would attempt to build on experience in S&L programs in other countries, both industrialized as well as developing countries, including those supported through GEF projects. This will facilitate more information uptake that will be useful in guiding the collective work for on ES&L harmonization, starting with the test procedures. *GEF support is required for administration of the work group and for meeting expenses including travel.*
102. **Activity 4.4: Regional ES&L Harmonization Initiative** - This major activity will consist of specific tasks aimed at laying the groundwork for the facilitation of the planned regional ES&L harmonization starting with test procedures, and later on standards & labels. These will be carried out in consultation with the Working Groups and the Country Teams in the BRESL countries. The technical assistance that will be provided under this major activity will be for the conduct of the following sub-activities:

Sub-Activity	Country	Responsible Entity
Design/development of policies, implementing rules and regulations related to the harmonization and mutual recognition of ES&L test protocols among the participating countries.	All	Regional PMU (in cooperation with Partners) <sup>42</sup>
Evaluation of the impacts (e.g., on national and regional trade, energy savings from the implementation of ES&L programs at the national and regional levels)	All	Regional PMU (in cooperation with Partners)
Development of a regional energy efficient equipment and appliance market monitoring program, which will be implemented collectively by the BRESL countries	All	Regional PMU (in cooperation with Partners)
Development of a promotion program for worldwide recognition of regionally produced ES&L program-compliant equipment/appliances	All	Regional PMU (in cooperation with Partners)
Development of methodology and tool development (universal impact calculator, impact assessment methodology, data survey protocols, program evaluation protocol)	All	Regional PMU (in cooperation with Partners)
Design of pilot programs for the application of harmonized Test Procedures, Certification, Accreditation Implementation, and ES&L Tools <sup>43</sup>	All	Regional PMU (in cooperation with Partners)
Design of a pilot program for a regional energy benchmarking system	All	Regional PMU (in cooperation with Partners)
Conduct of regional workshops on collaborative harmonization initiatives where, among others, the results of the above technical assistance activities will be disseminated to all BRESL countries (and where possible other Asian countries)	All	Regional PMU (in cooperation with Partners)

<sup>42</sup> Partners refer to the co-financers (excluding the BRESL country governments) that have parallel activities, which are subsumed into BRESL. These are the regional harmonization initiatives of EF (China), ICA (Bangladesh, China, Thailand & Vietnam), CFL-HI (Asia), as well as TA from Australian Greenhouse Office (AGO) and Korea Energy Management Company (KEMCO) on ES&L harmonization.

<sup>43</sup> This will be in conjunction with the regional work that will be led by China in Activity 5.5.

103. The work on the abovementioned sub-activities will be carried out in an integrated and coordinated fashion with the initial work towards regional ES&L harmonization led by China. *GEF support is required for the technical assistance in developing the studies, evaluation, and pilot program design work that will be carried out under this activity.*
104. **Activity 4.5: Preparation of a Plan for Regional Activities and Coordination after the GEF-Funded Project Ends:** When the BRESL project ends, there will be many ES&L activities to continue. It is anticipated that with barriers eliminated or at least substantially reduced, many of these activities will continue, particularly at the national level. However, regional coordination and harmonization will still be useful. Towards the end of the project, a Sustainable Follow up Plan for activities that will be carried out after the BRESL will be developed, so that key regional activities and frameworks that were established under BRESL can continue. It is important to begin development activities in Year 5 for the continuation of the regional coordination activities particularly for sustaining and enhancing the established regional ES&L harmonization.

Sub-Activity	Country	Responsible Entity
Stocktaking of the interventions that were carried out and outputs delivered <sup>44</sup> .	All	Regional PMU & CTs/DIPs
Setting up of revised targets to be accomplished in the next 5 or 10 years after the project	All	Regional PMU <i>in consultation with</i> CTs/DIPs
Definition of the activities designed to achieve the set targets, and preparation of budget estimates for the proposed activities	All	Regional PMU <i>in consultation with</i> CTs/DIPs
Identification and securing of potential funding sources <sup>45</sup>	All	Regional PMU
Agreement on, and approval of, the follow-up plan	All	Regional PMU <i>in consultation with</i> CTs/DIPs

105. *GEF support is required for technical assistance in the development of the sustainable follow-up plan.*

#### **Component 5: ES&L Pilot Projects**

106. This component is intended to provide flexibility to individual countries, or groupings of countries, to carry out policy research and implement pilot projects at the national level that build on the regional foundation provided by BRESL. Some of the regional activities, e.g., regional training efforts (Activity 2.1) and the Lessons Learned reports (Activity 4.2) – will provide input into the specific activities described below. But the activities under Component 5 will be implemented at the national level, with coordination across the region. An important note is that, for each activity under Component 5, the scope and budget will vary by country depending on the needs and interests of the particular country.

<sup>44</sup> These could include established frameworks that has to continue, M&E and reporting activities that becomes a regular activity/responsibility of a specific institution, continuing education activities, replications of demonstrations, information sharing agreements within a region, monitoring of energy savings and CO2 emission reductions, etc.

<sup>45</sup> This could include discussions with regional and international agencies that may be interested in supporting and sponsoring regional ES&L activities on an ongoing basis.



107. **Activity 5.1: Government Procurement (Bangladesh, Indonesia, Thailand, and Vietnam):** A number of governments in the region – and in particular China and Korea – have developed aggressive government procurement programs that mandate the purchase of high-efficiency equipment (i.e. equipment in the top ranking of a comparative label or that receives a national endorsement label ranking). This activity will build on the review of government procurement schemes included in the Lessons Learned report (Activity 4.2).

Sub-Activity	Country	Responsible Entity
Review of the Lessons Learned report and conduct of a national seminar to present the findings and recommendations	Bangladesh, Thailand, Vietnam	BSTI, DEDE, MOI
Development of a strategy to promote, and eventually mandate, procurement of only high-efficiency equipment <sup>46</sup>	Bangladesh, Thailand, Vietnam	BSTI, DEDE, MOI
Design and development of a mass purchasing program involving government/private sector and manufacturers/importers of energy efficient products <sup>47</sup>	Indonesia	DGEEU
Piloting of appropriate mass purchasing agreements for a selected EE product (one of the 6 BRESL products) in 3 private establishments <sup>48</sup>	Indonesia	DGEEU

108. This major activity is related to the objectives of Activity 2.1. *GEF support is necessary for the required technical assistance in the development and implementation of the proposed government procurement schemes, and in the development of mass purchasing agreements.*

109. **Activity 5.2: Database (and Web Site) of Energy-Efficient Equipment (Bangladesh and China):** This major activity will involve the development of an accurate and widely available in-country database (and web site) on energy-efficient products and their usage, similar to that in South Korea. This will be carried out in Bangladesh and China.

Sub-Activity	Country	Responsible Entity
Conduct of a survey on consumer information needs related to energy-efficient products.	Bangladesh, China	BSTI, NDRC/CSC
Collection of necessary information on 2 identified pilot BRESL products from local manufacturers.	Bangladesh, China	BSTI, NDRC/CSC
Development of a web-based national database system that will include core ES&L information <sup>49</sup>	Bangladesh, China	BSTI, NDRC/CSC

<sup>46</sup> Each country will tailor a pilot program to its own domestic situation, but will share the results with other countries at the regular regional BRESL meetings. A suitable M&E plan will be devised to monitor the outputs and outcome of this pilot scheme. The outcome of this activity will be a specific procurement policy or directive in each country and actual procurement of efficient equipment by at least one government agency or ministry.

<sup>47</sup> Mass purchasing, as a market aggregation activity, is intended to provide consumer with better quality products, efficient delivery and lower first cost.

<sup>48</sup> The impacts of this market aggregation activity will be monitored and evaluated. Results of the exercise will be disseminated to all government offices and other buyer groups to include, housing estate developers, homeowners and commercial centers association, and industrial zones. The results will also be shared to other BRESL countries.

<sup>49</sup> These could include a listing of the top-rated energy-efficient products; sales and market share information for different appliance and equipment types; saturation rates and usage levels; etc.

110. The information will be presented for use by domestic consumers but will also be linked to the BRESL regional project web site, with the intention of eventually creating a regional database for compliance that shows test results of the energy performance of all major end-use equipment. This major activity will also be linked to Activities 2.3 and 2.4. *GEF support is necessary for the required technical assistance in the development of the database of EE appliances/equipment.*
111. **Activity 5.3: Development of Consumer Education Schemes (Bangladesh, Indonesia and Pakistan):** This major activity will address the barrier related to consumers having a low level of awareness about the benefits of energy-efficiency standard and labeling.

Sub-Activity	Country	Responsible Entity
Design and development of a national awareness campaign using media to increase people's awareness about ES&L <sup>50</sup>	Bangladesh, Indonesia, Pakistan	BSTI, DGEEU, MOE
Implementation of the national awareness campaign to remove market barriers for the energy efficient appliances in general; and specific appliances in each country, in particular <sup>46</sup> .	Bangladesh, Indonesia, Pakistan	BSTI, DGEEU, MOE
Development and promotion of financial incentives in parallel with the awareness enhancement efforts <sup>51</sup> .	Bangladesh	BSTI

112. This activity will be linked to Activity 1.2. *GEF support is necessary for the required technical assistance in the design and implementation of the awareness enhancement schemes.*
113. **Activity 5.4: ES&L Initiatives Financing (Indonesia)** - The focus of this activity, which will be carried out in Indonesia, is on ensuring the financially sustainable implementation of the country's ES&L program. It will include carrying out tasks that would lead to the building of joint government and private sector financing schemes for ES&L programs and the development of consumer-financing schemes for the purchase of ES&L equipment. The sub-activities are the following:

Sub-Activity	Country	Responsible Entity
Development & implementation of consumer financing schemes for the purchase of EE equipment/appliances that comply with MEPS.	Indonesia	DGEEU
Provision of technical assistance in the conduct of negotiations on financing arrangements with EE equipment/appliance suppliers (importers and manufacturers)	Indonesia	DGEEU
Establishment of financing schemes for projects in the commercial and industrial sectors that employ equipment/appliances in compliance with the ES&L program	Indonesia	DGEEU

<sup>50</sup> The campaign program in Pakistan will specifically involve NGOs and CBOs.

<sup>51</sup> The application of financial incentives has been identified as an element of Bangladesh's Draft National Energy Policy.

Sub-Activity	Country	Responsible Entity
Conduct of national workshops to: (1) present the financial schemes; and, (2) present the results and impacts of the implemented financial assistance schemes	Indonesia	DGEEU

114. *GEF assistance is required for supporting the design and development of the financing schemes, as well as in the promotion and evaluation of the same.*

115. **Activity 5.5: Regional Harmonization Promotion (China)** - As the BRESL lead country, China will initiate the implementation of regional ES&L harmonization work that will complement the activities carried out in Component 4. The major tasks that will be carried out under this activity are as follows:

Sub-Activity	Country	Responsible Entity
Establishment of a Regional ES&L Harmonization Facility, which will serve as the main service platform for BRESL countries, and possibly other Asian countries in their individual and collective ES&L efforts	China in cooperation with other BRESL countries	NDRC/CSC, Regional PMU, in coordination with CTs/DIPs; ICA <sup>52</sup>
Conduct of regional training workshops/programs in selected ES&L testing facilities on the development and implementation ES&L programs and testing protocols for the 6 BRESL products <sup>53</sup>	China in cooperation with other BRESL countries	NDRC/CSC, Regional PMU, in coordination with CTs/DIPs; ICA
Piloting of developed harmonized ES&L test procedures and the application of ES&L tools	China	NDRC/CSC in coordination with Regional PMU; ICA

116. *GEF support is required for the technical assistance needed in the establishment of the regional ES&L harmonization facility, conduct of training workshops, and the piloting of harmonized ES&L test procedures and tools.*

117. All of the BRESL countries will participate in most of the Component 5 project activities. However, a few countries have elected to skip some activities or to emphasize certain aspects of an activity. Country participation by activity is summarized in Tables 8 & 9.

118. **Changes Relative to the Project Concept Document.** This Project Brief includes some evolution in project thinking since the Project Concept Paper was submitted. Major changes include a reduced number of countries (several countries dropped out due to other priorities for using their GEF allocation) and the expansion of the number of targets targeted from 5 to 6 ½ (the half is work on rice cookers in three of the countries). Most of the activities in the Concept Paper are retained, but have been rearranged to make implementation easier. A few components were dropped because they were either not

<sup>52</sup> Harmonization work of ICA on motors, magnetic ballasts and air conditioners in China (including work on motors in Thailand and Vietnam) are included in Activity 5.5.

<sup>53</sup> This is where the participation of other Asian countries, particularly those that have ongoing and fairly well developed labeling programs of their own, in the BRESL's regional harmonization scheme will be ensured. This will ensure ES&L knowledge transfer from these countries (e.g., Philippines, Thailand).

needed or were too expensive relative to the value they provide. Annex A summarizes how the Project Concept Paper has evolved into this Project Brief.

*Project Indicators, Risks and Assumptions*

119. The project success indicators are shown in the Project Planning Matrix (PPM) in Section II, Part II. The target values for these indicators based on the PPM, which will be monitored during the course of the BRESL project implementation, are summarized in Section IV, Part VI.

**Table 8: Country Participation in the Various Project Elements.**

Activity	BGD	CPR	INS	PAK	THA	VIE	ROK
<b>Component 1: ES&amp;L Policy-Making Program</b>							
1.1 Legal Framework	●	[1]	●	●	[2]	[3]	
1.2. ES&L Regulations							
AC	●	●	●	●	●	●	●
Ballast	●	●	●		●	●	
Fan	●	●	●	●	●	●	
Motor	●	[4]	●	●	●	●	●
Refrigerator		[4]	●	●	●	●	●
CFLs	●	●	●	●	●	●	●
Rice cookers		●			●	●	
<b>Component 2: ES&amp;L Capacity Building Program</b>							
2.1 Workshops	●	[5]	●	●	●	●	
2.2 Technical Working Groups	●	●	●	●	●	●	●
2.3 Testing & Certification	[6]	[7]	●	●	[8]	●	
2.4 Data Reporting	●	●	●	●	●	●	
<b>Component 3: ES&amp;L Manufacturer Support Program</b>							
3.1 Technical Reports on Appliances/Equipment	●	●	●	●	●	●	●
3.2 Manufacturer Workshops	●	●	●	●	●	●	
3.3 TA to Local Equip <sup>t</sup> /Appliance Manufacturers	●	[9]	●	●	[10]	●	
<b>Component 4: ES&amp;L Regional Cooperation Program</b>							
4.1 Information Website	●	●	●	●	●	●	●
4.2 Lessons Learned Report	●	●	●	●	●	●	●
4.3 Standards and Label Network	●	●	●	●	●	●	
4.4 Regional Harmonization Support	●	●	●	●	●	●	●
4.5 ES&L Follow-up Plan	●	●	●	●	●	●	●
<b>Component 5: ES&amp;L Pilot Projects</b>							
5.1. Government Procurement	●		●		●	●	
5.2. Website of EE Products	●	●					
5.3. Consumer Education	●		●	●			
5.4. ES&L Initiatives Financing			●				
5.5. Regional Harmonization Promotion <sup>54</sup>		●					

NOTES:

- |  |   |
|--|---|
| 1. Emphasize implementation            | 2. Improve framework, make labels mandatory |
| 3. EC law formulation                  | 4. Technical assistance resource            |
| 5. Help in capacity development        | 6. Emphasize laboratory accreditation       |
| 7. Emphasize MRA                       | 8. MRAs and certifying extra laboratories   |
| 9. Emphasize sales of high EE products | 10. ES&L needs assessment; emphasize S&M    |

120. The likely role of participating countries is shown in Table 9. The table is based on the survey responses and limited informal consultations with likely partners.

<sup>54</sup> Led by China, but participated in by all BRESL countries, and possibly some non-BRESL countries in Asia.

**Table 9: Role of Participating Countries in the BRESL Project**

Country	Direct implementation in country	Participation in regional harmonization activities	Donor or provider of TA
Australia		●	●
Bangladesh	●	●	
China	●	●	
Indonesia	●	●	
Pakistan	●	●	
Korea, South		●	●
Thailand	●	●	
Vietnam	●	●	

121. While all possible efforts have been made to ensure the effective design and implementation of the project activities in the project design phase, there are inevitably some unavoidable residual risks that will have to be carefully monitored and managed during the project to ensure its success. The different risks that were identified during the project formulation and the recommended mitigation measures and a commentary on the need for mitigation measures are provided in detail in Section IV, Part V.
122. The overall project risk is moderate. The principal risks, which can potentially hinder the successful project implementation and/or reduce project effectiveness, relate to: (a) the sustainability of the support by key stakeholders in the participating countries; (b) lack of, or fading, interest of the private sector (particularly appliance/equipment manufacturers and suppliers); (c) Financing of investments for manufacturers to modify their production facilities may not be available. (d) ineffective project coordination at the national and/or regional levels; (e) failure of EE products to perform as claimed by manufacturers resulting in customer dissatisfaction; (f) unabated proliferation of illegally traded and unreliable EE equipment/appliances; and, (g) unwillingness of consumers to buy EE products due to bad experiences in the past and high initial cost may lead to failure of the project to induce increased sales and widespread use of EE equipment and appliances. To address these risks, the project has to establish effective means to monitor and to the extent possible mitigate these risks. Mitigation measures include a strong emphasis on hands-on project management and participation of each country, mobilizing private sector participation and a continuous dialogue between the project's donors, implementing Partner, executing agency, regional organizations and national governments.

*Expected Global, National and Local Benefits*

Global Benefits

123. The project is projected to reduce GHG emissions from the region by 24.8 MMT CO<sub>2</sub>/yr by project end. Savings will steadily mount after the project ends as existing equipment is replaced by more efficient equipment, reducing GHG emissions by about 188.1 MMT/yr ten years after project end, and by about 273.5 MMT/yr twenty years after project end. In addition, the project will demonstrate successful ES&L programs in the BRESL countries, which represent a wide range of situations and experiences. The demonstration of the various aspects of the development and implementation of ES&L programs, and the lessons learned will be helpful for starting or improving ES&L programs in other regions.

National Benefits

124. The participating countries will benefit from a substantial reduction in electricity growth rates, meaning less new power plants that need to be built. This will free up capital for other uses. Consumers and businesses will have lower electricity bills due to reduced electricity consumption. Assuming an average electricity price of US\$ 0.08 per kWh, electricity bill savings will total about US\$ 2 billion in the last year of the project, rising to about \$29 billion twenty years after the project (all figures in 2006\$). After considering the slightly higher cost of efficient products and a 6% real discount rate, net consumer benefits will total over US\$ 100 billion over the 2011-2031 period (2006\$). In addition, equipment manufacturers in the region will be producing more efficient products, allowing them to better compete in world markets. And many of them will be producing more "value-added" products that generally have higher profit margins than "commodity grade" products, increasing profits relative to baseline.

*Country Ownership: Country Eligibility and Country Drivenness*

125. All of the six (6) participating countries in the BRESL project have ratified the UNFCCC. The ratification dates are as follows: Bangladesh (22 June 1994); China (16 May 1994); Indonesia: (29 June 1994); Pakistan (4 August 1994); Thailand (30 June 1994); and, Vietnam (12 May 1994).

126. All of these countries have completed and submitted their First National Communications under the framework of the UNFCCC. These communications all highlighted that EC&EE, in general, and ES&L, in particular and among the measures each country are considering for the reduction of GHG emissions. At present, some of the participating countries have already carried out ES&L programs. Two of them (China & Korea) are already well-advanced in their activities in this area. The others are either just starting (Bangladesh, Indonesia, Pakistan, Vietnam) or have done significant work on ES&L as part of their demand side management (DSM) activities (Thailand). All of these countries are now preparing their Second national Communications to the UNFCCC.

127. UNDP came up with the concept of this regional ES&L project as part of its initiative to promote energy and environment for sustainable development back in May 2004. Since then, the development of the BRESL has involved consultation meetings with the participating countries starting mainly with energy officials in the ASEAN countries. A regional survey was also carried out to identify ongoing and planned ES&L initiatives in the Asian region as well as the barriers to ES&L development and implementation in each participating country and those that affect and hinder regional efforts to ES&L harmonization. A regional stakeholders' consultation workshop was also conducted to discuss the identified national and regional barriers. Said consultation workshop also came up with the national and regional activities that are proposed to be carried out under the BRESL project, including the project implementation and management arrangements.

128. BRESL is currently the only regional ES&L barrier removal initiative in Asia. It has direct linkages to and collaboration with ongoing Asia-Pacific regional and national programs. These include ongoing and planned ES&L programs of the participating countries, most of which are in China and Korea. BRESL will also work in collaboration with the ES&L activities of the International Copper Association (ICA) in some of the participating countries, as well as the ongoing project on the International CFL harmonization Initiative. Some of these have parallel activities that, as per agreement with the project proponents/owners, would be subsumed in the BRESL Project.

129. It should be noted that these projects are funded separately and are among the co-financed activities of BRESL. As part of the regional project (and indicated in the PPM), their results are reported as among the outputs of BRESL. Where necessary, GEF resources will be used for technical assistance in the implementation of some of these parallel activities. The matching of these parallel activities and BRESL's technical assistance is very important in achieving the market transformation envisioned through the widespread implementation of effective ES&L programs. Representatives from these partner organizations are members of the BRESL's Regional Project Steering Committee.

### *Sustainability*

130. Sustainability is an integral element of the BRESL activities and is ensured through the outputs of most of the project components. The sustainability of the institutional elements of the project will be ensured through the adoption of collaborative approaches and strategies that seek to foster and reinforce the long-term sustainability of existing institutional and coordination structures that have been established and are operational at both the national and regional levels with regards to projects dealing with energy and trade.
131. The establishment of effective energy efficiency standards and/or labels leads to a more sustainable energy future. First of all, energy standards and labels are generally introduced through a formalized process leading to a government regulation or endorsement during the project. Once established with a clear government imprimatur and a solid institutional infrastructure, a properly designed and implemented ES&L program can effectively transform the market to a higher level of energy efficiency with a gradual ratcheting-up of energy efficiency standards over time to take into account new technological developments and the country's capacity to pay for that technology.
132. Since the BRESL is designed as a strong capacity-building project (as part of the barrier removal objective), the main project outputs will not only be new energy efficiency standards and labels, but also institutional structural growth with a capacity to effectively maintain and revise the ES&L program over time. The government agency with the ES&L mandate (or those actively engaged in energy conservation and energy efficiency promotion activities) in each Asian country, which will play a significant role in the implementation of the national activities under BRESL, is expected to continue to spearhead and sustain the activities after the project life. The national activities of the BRESL project will be mainstreamed into the country's energy efficiency program in the next 10 years. If a country has an energy conservation law, the project will strengthen the component that relates to ES&L programs. The proposed project will strengthen the role of these agencies in leading the ES&L efforts and GHG emission mitigation activities in each participating country. Periodic monitoring and evaluation of ES&L programs and activities in each country will be institutionalized and will be continued even after the end of the BRESL project. This will bring sustainability of the project with desired benefits in the long run.
133. Regional cooperation in the area of ES&L will be encouraged and established to enable South-South transfer of technical know how and technology. A network of collaborators throughout the region and around the world with a common mission, bringing attention and high priority to efficiency standards and labels within key development institutions will be established. This is to achieve higher awareness of international developments, benefits of harmonization, and trade advantages. It should be emphasized that BRESL will foster regional collaboration and harmonization throughout the region, which will greatly strengthen the effectiveness of individual national ES&L programs. With this, the market

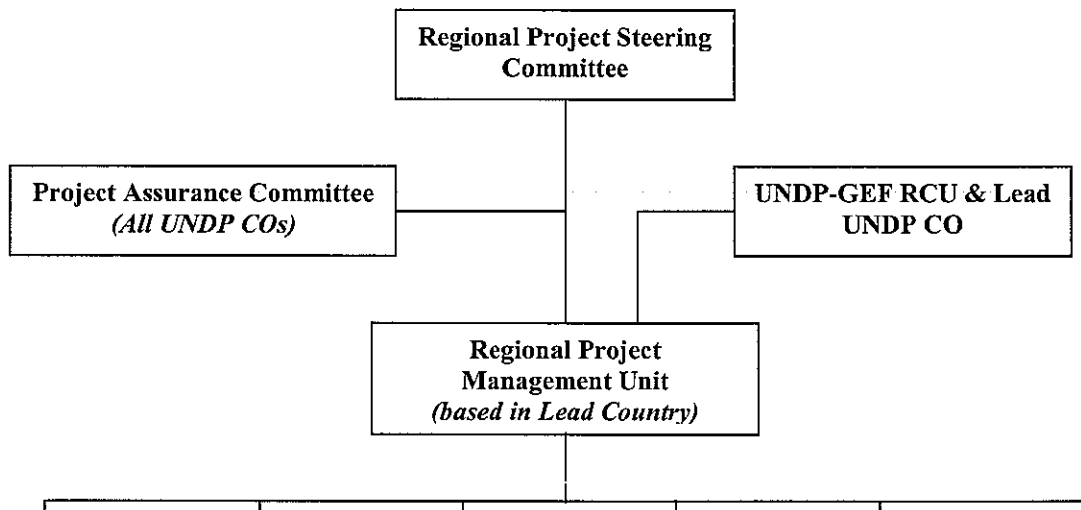
transformation and resulting carbon emission reduction from this project will persist far beyond the term of the project.

*Replicability*

134. BRESL is designed to have a balanced mix of capacity building and enabling environment activities that are tailored to the participating countries' specific conditions, markets and regulatory environment, and ES&L programs on the ground. Such balanced mix of activities is expected to promote market transformation favoring energy efficient appliances/equipment in the region and shifting investment patterns from standard quality appliances/equipment toward those of the energy efficient varieties. With enhanced enabling environment and the capacity built through the project, replications of several specific interventions that will be carried out in the project are expected. In particular, the pilot project activities that will be carried out are meant to showcase feasible design and application of ES&L programs, design and manufacturing of energy efficient equipment and appliances, widespread utilization of such equipment/appliances in the commercial, industrial and residential sectors, enforcement of policies and policy support activities, and implementation of financing schemes for supporting projects that promote utilization of energy efficient equipment and appliances. Replication is an integral component of the project design as the expected energy savings from the utilization of energy efficient equipment/appliances (and the corresponding GHG emissions reduction from the reduced electricity demand) rely on the replication of the relevant BRESL activities.
135. Replicability of the proposed project components will be ensured through the documentation of the package of activities/inputs that went into each EC&EE projects that are in one way or another, directly or indirectly influenced by the BRESL.

**PART III: MANAGEMENT ARRANGEMENTS**

136. Given the past experience with UNDP-supported project, UNDP seeks to implement an innovative management approach based on a partnership where accountability and responsibility for managing and achieving project outputs are equally shared among the BRESL participating countries. The partnership will be based on strengthened management at the regional level and the national level. The BRESL consists of two levels activities: (i) enhancing the regional cooperation/ multi-recognize and sharing the best practices of energy efficiency standard and labeling (EESL), and (ii) developing and implementing country-specific strategies and activities for energy efficiency standard and labeling (EESL) to overcome the barriers of reducing the energy consumption within each national context. The organizational structure is shown as follows:





**Fig. 3: BRESL Project Organizational Structure**

**Regional Coordination and Implementation Arrangements**

137. The management structure of the BRESL project will mirror the aforementioned two-track approach, and will be at 2 levels. The first level will mainly be for the facilitation of regional cooperation. A Regional Project Steering Committee (RPSC) will be established and will comprise of the representatives of the UNDP-GEF Regional Coordination Unit (RCU) for Asia-Pacific, UNDP-China, participating country's Government Focal Points (GFP), NDRC, and also including CSC and the Director of the Regional Project Management Unit (RPMU). The RPSC will play the role of an advisory committee. The RPSC member will also be invited to participate in the annual project review meetings. The Chairperson of the RPSC will be elected on a rotating basis among the participating countries. The RPMU will be also established to be responsible for coordinating and implementing the regional and national activities of the project. The RPMU Director will serve as the Secretary of the RPSC. BRESL will be Nationally-Executed (NEX) on behalf of the participating countries by China as the host country. It will assume the overall responsibility of ensuring that all activities are executed accordingly and as per the approved Project Document. The National Development and Reform Commission (NDRC) will be the Implementing Partner (or Executing Agency) for the BRESL project while the China Standard Certification Center (CSC) is the Designated Implementing Partner (or Designated Implementing Agency).
138. The Regional Project Steering Committee (RPSC) will be established with the key responsibilities as follow: (a). Reviewing of annual progress reports for necessary guidance; (b) Reviewing and approving the annual work plans and budgets; (c) Providing guidance on the effectiveness of BRESL project implementation, and its linkages to corporate UNDP policy decisions, and other UNDP initiatives; and, (d) Monitoring and evaluating the implementation of BRESL towards the intended outputs, after two years of project execution. As a minimum, the RPSC will meet at least once a year, allowing for the stakeholders to review the progress with the project implementation and to agree on a coordinated annual project implementation strategy and plan.
139. UNDP-China, together with the UNDP-GEF Regional Technical Advisor for Climate Change in the Asia-Pacific region will carry out the GEF oversight. Working in conjunction with the various project partners, UNDP-China will be responsible for monitoring and evaluation (M&E), including organizing project reviews, approving annual implementation work plans and budget revisions, monitoring progress, identifying problems, suggesting actions to improve project performance, facilitating timely delivery of project inputs, and provide linkages to the other sub-regional, Asia-Pacific regional and global initiatives. All M&E functions will be carried out in line with standard UNDP and

UNDP-GEF procedures. UNDP China will also provide country office support for all the activities of the project as agreed with the implementation partner of China.

140. As the Implementing Partner for this regional project, China's NDRC will appoint a Regional Project Director (RPD) to be in charge of overall responsibilities, including planning, coordination, administration and financial management of the project with support by UNDP-China. The RPD will be responsible for the achievement of the project objectives, for all projects' reporting, including the submission of Annual Work Plans (AWP) and financial reports. He/She will ensure the delivery of the project outputs and the judicious use of the project resources. This will ensure that expected outputs are delivered using the most efficient and cost-effective implementation strategies and procedures. The RPD will be also a member of the BRESL RPSC. As the project's Implementing Partner, the NDRC will also provide in-kind contribution to implement the BRESL project.
141. As the Designated Implementing Partner for this regional project, the China Standard Certification Center (CSC) will take responsibility of supporting NDRC and UNDP-China in managing and implementing the BRESL project. The Director of CSC will be a member of the BRESL RPSC. At the same time, the director will also provide guidance to the RPMU Director to manage the project. The CSC will also provide the overall guidance and approval of all operational activities and will report to the Implementing Partner on achievement of project results.
142. A Regional Project Management Unit (RPMU) will be established by UNDP-China, together with the NDRC and CSC. The RPMU will be responsible for the day-to-day management of all the project activities including those on capacity building, demonstration sub-projects and dissemination activities both at the regional and national level. At the same time, the RPMU will undertake some regional activities directly if needed. RPMU will be managed by a RPMU Director, who will be supported by three staff members.
143. A Project Assurance Committee (PAC) will be established with the main responsibility of monitoring the project implementation process and achievements. The Energy Focal Points of UNDP Country Offices (UNDP-COs) in the BRESL countries will be members of the PAC. They will also be called upon periodically to contribute inputs on the relevance of BRESL activities to the on-going and planned national level energy efficiency and related initiatives. Each PAC member will be responsible for the coordination of project activities and activities of the organizations he/she represents to avoid duplication of effort. On request from the RPMU, the PAC will provide guidance on the execution of project activities.
144. Relevant regional activities will be subcontracted to, and executed by appropriate regional organizations with the expertise and time on mutually agreed terms. Regional organizations, which have the comparative advantage vis-à-vis the relevant regional activities, will be designated as the sub-contractor for those activities. One mechanism to determine such possible comparative advantages is procurement via Open International Competition or Limited International Competition, as per UNDP Results Management User Guide.

#### **National Coordination and Implementation Arrangements**

145. The second level will mainly be on the implementation of the Country Teams (CTs) in each BRESL country. The CTs, made up of representative from government, the private

sector and civil society including NGOs will ensure that the national activities are carried out in coordination with all the parallel activities. Each CT will provide support as per agreed work plan to the BRESL implementation at the regional level to ensure the maximum outputs and achievement of the project. Each country will decide on the most appropriate person to chair the CT. Each CT will appoint their own national experts, as needed, in accordance with the agreed national activities to be carried out under the BRESL project. Each country will appoint a National Project Coordinator (NPC) who will work full time on the project and paid from its country budget. The NPC will also be responsible for the day-to-day management and implementation of all national project activities.

146. In each BRESL country, the national level activities that were identified and defined by the country will be implemented by its CT. These are activities that address specific barriers to ES&L at the national level, delivering on-the-ground activities including appliance and/or equipment testing utilizing local experts and involving entities working on ES&L, as well as those that will contribute to the regional ES&L harmonization efforts. This is to ensure maximum impacts and visibility. It will also give country's ownership of the project, maximum local participation, particularly of the private sector, NGOs and local authorities, and more importantly the consumers. CTs may subcontract certain activities to regional and international experts where necessary.
147. National government professionals and other relevant national stakeholders from the private sector and civil society will, to the extent possible, manage, coordinate and implement the in-country activities. The CTs will upon request of the RPMU and as per agreed work plans be provided with external technical assistance for implementation of specific in-country activities. Relevant regional organizations, national consultants, regional consultants or international consultants can provide such needed expertise to the RPMU as needed.

### **BRESL Project Implementation**

148. The proposed BRESL project will be implemented for five years. Considering the duration of the process of obtaining GEF funding, it is anticipated that the project will kick-off by the second quarter of 2008 and will conclude by the end of 2013.
149. Each country team will prepare its overall country work plan (5 years) at the inception stage of the project based on the BRESL activities that are described in Paragraphs 75 - 118, specifying the level of activities that will be carried out for the year, the targets to be achieved, and the corresponding inputs (in terms of manpower and budget). During the inception stage, each country will prepare its first year work plan and submit this to the Regional PMU. This is reviewed by the Regional PMU and approved for the allocation of funds for the implementation initial year activities. Succeeding annual work plans, based on the results of the previous year and the planned activities for the current year, will be prepared and submitted for approval and budget allocations at the start of each year.
150. Also during the inception stage, each country team will prepare its overall M&E plan (5 years) based on the overall country work plan, and also based on the BRESL project planning matrix (Table 14), BRESL annual targets (Table 23) and BRESL monitoring plan (Table 24). Like the overall BRESL M&E plan (see Paras 158-160), this will consist of success indicators (output and impact) with realistic targets and time lines, and backed up with clear means of verification, and assumptions. The capacity building on M&E that is part and parcel of the design of the overall EE appliance/equipment market monitoring

scheme in Activity 2.4 is expected to enable the country team to carry out the monitoring activities as well as make meaningful assessments of the data gathered/reported. Each activity/task that will be carried out will be monitored in terms of the appropriate output indicators (for the activity deliverables) and the impact indicators (for the impacts). The targets will be reviewed each year and any necessary revision or adjustment of these, as well as the assumptions will be done on a continuous basis during the life of the project as part of adaptive management.

151. To accord proper acknowledgement to GEF for providing funding, a GEF logo will appear on all relevant publications and documents produced by the project, including among others, project hardware purchased with GEF funds. Any citation from any of the BRESL project publications and documents will also accord proper acknowledgment to GEF. The UNDP logo should be more prominent and separated from the GEF logo if possible, as UN visibility is important for security purposes.

#### **PART IV: MONITORING AND EVALUATION PLAN AND BUDGET**

152. Project monitoring, evaluation and dissemination will be undertaken in accordance with UNDP and GEF established procedures. The executing agency will be required to prepare Quarterly Project Reports (QPR) and combined Annual Project Reports and Project Implementation Review reports (APR/PIR) to UNDP. The QPR will provide the summary of the project results, progress and variances from the original plan, implementation issues, and steps being taken to address these issues, and work plans for the next quarters for review and endorsement.
153. Quarterly work plans will be prepared based on the overall project objectives and performance indicators. These will be used to measure performance. It is through these reports and meetings that the project approach and activities will be formally refined. The PMO will present the project status and accomplishment to the PSC every quarter. A quarterly work plan based on project objectives and performance indicators will be presented, evaluated and adjusted as and when necessary.
154. The APR/PIR will provide a more in-depth summary of work-in-progress, measuring performance against both implementation and impact indicators. Any adjustments in project approach will be reported to the Regional Project Steering Committee who will evaluate and approve the adjustments recommended.
155. The project is subject to two in-depth independent reviews. One will be conducted in the mid-term (first quarter of the third year) and the other will be scheduled upon project termination. A terminal report would be completed prior to the completion of the project and would detail project achievements and lessons learned. Additional independent evaluation may be conducted if UNDP and the GEF deem it necessary.
156. As executing agency, CSC will carry out continuous self-monitoring of the project implementation performance. The in Section II, Part II states all the success indicators and means of verification for each activity that will be carried out under this project. These indicators are the parameters that will be monitored by CSC under this project.
157. To ensure coherent, coordinated and timely implementation of project activities, appropriate practical mechanisms, monitoring and evaluation (M&E) procedures and implementation arrangements will be developed between and among national and local government agencies, financial institutions, private sector partners, local NGOs and consumer groups.

Specifically, an M&E plan for the BRESL implementation will be developed together with the key stakeholders, and this plan will be based on the identified success indicators and means of verification for the project goal, project purpose, project outcomes, and project activities. The Regional PSC will advise and approve this M&E plan.

158. Surveys will be conducted during the project to track these and other indicators of project impact. Monitoring and Evaluation (M&E) activities will be undertaken to best international practice standards with reference to the International Monitoring and Verification Protocol (IPMVP) methodology. This reference to established international best practice IPMVP methodologies will be a vital element in the presentation of the results of the overall BRESL project to the full range of project stakeholders, including but not limited to GEF.
159. Success indicators for each objective and activity in the PPM will be monitored and evaluated during the course of project implementation. Section IV, Part VI provides the annual targets and the monitoring plan. The extent by which the GEF developmental goal is achieved will be evaluated from the monitored results. Annual target values for the indicators will be confirmed during project document finalization.
160. The project will coordinate with all the project partners. The continuous monitoring and evaluation of all project activities, even after completion of the project period, will bring sustainability of the project with desired benefits in the long run. All evaluation reports will be uploaded to the project website for widespread dissemination. A formal Monitoring and Evaluation Strategy will be developed and implemented in the full-scale project to track the activities and contributions of the activities by all the project partners, in terms of both in-cash and in-kind contributions as detailed in the attached letters of commitment. These M&E findings will be reported on in the project's two in-depth independent reviews.

## **PART V: PARTNERSHIPS STRATEGY**

161. The successful implementation of BRESL will depend on the development of effective partnerships between numerous different agencies at multiple levels. Partnerships will be pursued with international and national agencies, as well as international partners to enrich and further project aims. The project will form a partnership strategy with three elements: (a) international coordinating and implementation function; (b) national coordination and implementation function; and, (c) Technical and commercial function.

### **Key Partners**

162. BRESL will undertake the following activities to ensure that the project work is synergized with on-going national and regional level activities, as well as to benefit from the expertise available in the region:
  - Strengthen its links by developing Inter-agency Partnerships with key energy-related project nationally and internationally. These will include the Efficient Lighting Initiative (ELI), funded by the GEF and managed by the International Finance Corporation (IFC) and currently by the ELI Quality Management Institute; the UNDP-GEF funded End-Use Energy Efficiency Project (EUEEP) in China; and the Vietnam Energy Efficient Public Lighting (VEEPL). This outreach will also include finding synergies with on-going activities funded by the UNDP-GEF or GEF portfolio implemented by the World Bank, UNEP; other initiatives by UN sister agencies such as UN/ESCAP as well as projects

funded by the Asian Development Bank (ADB) and APEC, etc. BRESL will work with financing institutions in the region to provide support for energy service related initiatives.

- Partner with the NGO funding and implementation agencies such as the International Copper Association (ICA) and the Collaborative Labeling and Appliance Standards Program (CLASP) to broaden the reach and impact of the BRESL project.

## **PART VI: Legal Context**

163. This Project Document shall be the instrument referred to as such in Article I of the Standard Basic Assistance Agreement between the Government of the Peoples Republic of China and the United Nations Development Programme, signed by the parties on 29 June 1979. The Executing Agency and Implementing Agencies shall, for the purpose of the Standard Basic Assistance Agreement, refer to the government cooperating agency described in that Agreement.

164. The UNDP Resident Representative in China is authorized to affect in writing the following types of revision to this Project Document, provided that he/she has verified the agreement thereto by the UNDP-GEF Unit and is assured that the other signatories to the Project Document have no objection to the proposed changes:

- Revision of, or addition to, any of the annexes to the Project Document;
- Revisions which do not involve significant changes in the immediate objectives, outputs or activities of the project, but are caused by the rearrangement of the inputs already agreed to or by cost increases due to inflation;
- Mandatory annual revisions which re-phase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility; and,
- Inclusion of additional annexes and attachments only as set out here in this Project Document

## SECTION II: STRATEGIC RESULTS FRAMEWORK AND GEF INCREMENT

### PART I: Incremental Cost Analysis

#### *Broad Development Goals*

1. Most of the Asian countries consider energy conservation and energy efficiency (EC&EE) to be cost-effective means of achieving their respective national energy objectives. Among these measures is the implementation of energy-efficiency standards and labeling (ES&L) programs. Such programs have the potential to effect complete market transformations for different classes of energy-saving products, at a cost far below the cost of providing new energy supply.
2. ES&L programs contribute to the realization of the Millennium Development Goals (MDG), particularly MDGs 1, 7 and 8, whereby the program can contribute to the eradication of extreme poverty directly and indirectly, improve environmental sustainability of a country's and/or a region's development path, and help improve trade ties and develop global partnership for development. Among the reasons for Asian countries becoming motivated to implement ES&L programs are the following:
  - Reduce growth in electricity use among the BRESL countries
  - Reduce energy bills, allowing consumers and businesses to use money saved to purchase local goods and services.
  - Improve products produced in BRESL countries so they can better compete in world markets.

#### *Global Environmental Objective*

3. ES&L programs are among the most cost-effective types of policies and EC&EE measures to address global climate change. Such programs have the potential to effect transformation of energy consuming appliance/equipment markets, which translates to widespread utilization of energy efficient appliances/equipment, at a cost far below the cost of providing new energy supply. With the widespread utilization of energy efficient products, GHG emissions from thermal power generation in China, Bangladesh, Indonesia, Thailand and Vietnam can be reduced significantly, as well as additional reductions in South Korea.
4. The project's objective is the removal of barriers to the cost-effective development and implementation of ES&L programs in Asia (particularly in the participating countries). To achieve the project objective, BRESL will comprise of 5 major components, each of which is a specific program consisting of specific activities designed to address the identified barriers.

#### *Baseline Activities*

5. In general, ES&L is known to many of the countries in the region, and some of these countries have already embarked on developing and implementing ES&L programs. However, such programs have progressed slowly and unevenly in Asia. In most Asian countries, even those that have ES&L programs, the average efficiency of products on the market is still far below the most efficient products available. Despite the difficulties, it is expected that countries in the region would continue to develop their ES&L programs, but still at a slow and uneven pace and hindered by and the mentioned barriers in financing, policy, technology

and information. Such would be the characteristic of the “business-as-usual” scenario in the field of ES&L development and implementation in Asia.

6. ES&L programs are underway in many countries in Asia region and are under consideration in most of the others. China and Korea both have extensive ES&L programs and update several standards and labels annually. Still, many of the standards in China are old and well below international norms. Thailand has a strong labeling program for several products but to date has set only two standards. A few lighting standards are likely to be set in the baseline. Other countries are just starting or exploring ES&L programs and are likely to make only limited progress without GEF support.
7. Electricity use is growing rapidly in the region with growth rates over the period 1999-2004 ranging from 4.9% – 12.3% annually (a simple average of 8.3% across the participating countries). In some countries such as China and Vietnam are growing at double-digit rates annually, straining electricity networks and requiring large investments in the electricity sector that are hard to sustain given other development goals. Table 10 below provides growth rates for individual countries.

**Table 10: Average Annual Growth Rate in Electricity Sales, 1999-2004**

Country	Annual Growth Rate (%)
Bangladesh	5.8
China	12.3
Indonesia	6.6
Korea	9.1
Pakistan	5.9
Thailand	7.8
Vietnam	11.9

Source: Energy Information Administration, U.S. Dept. of Energy

8. Several large global manufacturers are increasingly dominating appliance and equipment sales, squeezing sales and profit margins at many local manufacturers.

*GEF Alternative*

9. Under the alternative scenario, the BRESL countries will develop a much-improved capacity to design and implement ES&L programs. Barriers will be removed, capabilities improved, and countries will share analyses and experiences, all providing the foundation for adoption of more than 20 new standards and labels as part of this project (e.g., each of the BRESL countries is planning to establish standards and labels on approximately 4 products as part of this project). Furthermore, both national programs and regional cooperation will be well-established, allowing many ES&L activities to continue after GEF support ends.
10. The GEF alternative (i.e., BRESL project) will reduce electricity use in the participating countries by approximately 303,037 GWh/yr in 2031. These electricity savings will translate into billions of dollars of avoided investments in new power plants.
11. Standards adopted and education and technical assistance provided to manufacturers under the proposed project will provide local manufacturers with information on ways to improve product efficiency at moderate cost and on how to better sell more efficient products for increased profits. Manufacturers who adopt these techniques will be able to better compete in world markets.



12. In line with the GEF strategic objective for OP-5, the following interventions will be carried out under the BRESL Project:

- Creating the legal and regulatory basis for removing lowest EE technologies from the market and promoting high efficient technologies. Support will be provided to develop new laws and regulations including enabling laws, standards and labels on specific products, and implementation regulations and procedures.
- Strengthening institutions and developing capacities both in public and private spheres to secure on-the-ground implementation of the above. Activities will include training, regional technical working groups to develop standards, strengthening the national and regional testing and certification infrastructure, and improving data collection and reporting.
- Assisting manufacturers to better understand standards and labels and ways to use these programs to improve products and profits through modest cost efficiency improvements and improved marketing of high-efficiency, higher-profit products.
- Promoting regional coordination and information sharing through a regional ES&L website, preparation of a report on ES&L lessons learned from the region, establishment of a regional workgroup of ES&L officials from the region, and obtaining and providing information on ES&L activities beyond the region. In addition, planning for follow-up activities will begin in Year 3 and will be put in place by Year 5 so regional coordination can continue after this project ends.
- Undertaking several national level pilot projects to raise consumer awareness about efficient products and increase sales of efficient products that exceed minimum efficiency standards.

13. The following are the expected outcomes by end of the project:

- GHG emissions reduced by 24.8 MMT/yr CO<sub>2</sub> compared to business-as-usual scenario and a cumulative savings of 37.3 MMT/yr by the end of the project (2011).
- Electricity savings of 27,799 GWh/yr compared to business-as-usual scenario and a cumulative electricity savings of about 40,473 GWh/yr by end of project.
- New minimum efficiency standards for air conditioners, refrigerators, fluorescent ballasts, CFLs and electric motors adopted in at least 4 countries, reducing energy use for these products by at least 10% relative to business as usual (4% for motors).
- At least 4 countries adopt new or improved appliance and equipment energy efficiency labeling schemes.
- ES&L programs are operating by project end in at least 5 participating countries, with plans in place to continue these programs after the GEF project ends.
- Regional coordination on ES&L makes it easier for all countries to develop and maintain ES&L efforts and countries elect to continue this coordination after the GEF project ends.
- A majority of manufacturers in the region recognize the opportunities for ES&L efforts to increase their profits.
- Mutual recognition agreements and product certification and posting procedures in place so testing and certification in one country generally meets requirements in other countries, easing burdens on manufacturers and promoting regional trade.
- Increased market share of EE equipment/appliances in the different countries and in the region as a result of the ES&L programs.

14. The proposed project is comprised of five major components consisting of complementary activities designed to remove barriers to achieve the project objectives. A separate component on project management is also included. The project components are as follows:

- ES&L Policy-Making Program - Establishment of legal basis for standards and labels and assisting with the development of regulations for the targeted products.
- ES&L Capacity Building Program - 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 Program - 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 Program: Regional cooperation activities that will aid individual countries with development and implementation of their ES&L programs 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 programs, including support activities that build on the regional foundation provided by BRESL. This will include a number of activities implemented at the national level, with coordination across the region, as well as the initial work on regional harmonization led by China.

15. **Component 1: ES&L Policy-Making Program** - This component will include several activities to put in place new laws and regulations enabling and establishing equipment standards and labels. This will address the barrier that enabling laws or procedures are not in place in several of the participating countries or suffer from significant limitations. The focus here is to establish a legal and regulatory foundation for ES&L in each of the participating countries. This will include providing information and TA to countries without ES&L enabling authority in place so they can pass necessary enabling laws or regulations, and will also include providing information and TA to participating countries so they can adopt new standards and labels for the six targeted products. In addition, this component will include information and TA on standards and labeling implementation, in order to maximize compliance with ES&L regulations. Several of the participating countries lack experience and skills on the analyses and procedures to follow to establish standards and labels. This component will address this barrier. By working together to establish new standards and labels on the five targeted products, substantial and concrete benefits will be achieved. In addition, documentation of these benefits will help to build support for continued ES&L activities in each of the participating countries. For example, a country achieving substantial benefits from initial standards is more likely to allocate money out of national budgets to continue ES&L activities. In our survey of participating countries, one clear message we received was they want this project to focus on standard-setting actions and not just training and other enabling activities. This project component addresses this need. The activities under this component will collectively cost about US\$ 8.857 million. Incremental activities will cost US\$ 1,611,400 which will be financed by the GEF.

16. **Component 2: ES&L Capacity-Building Program** - This component will address several barriers including lack of technical know-how on ES&L, lack of institutional capacity on ES&L implementation, absence of adequate information on appliance and equipment efficiency and trends and limited local energy performance testing facilities. This component will include several key activities to build capacity for developing and implementing energy standards and codes including staff training, establishment of product-specific working groups, provision for adequate testing facilities, establishment of regular data collection and

reporting processes, and facilitation of mutual recognition agreements so that equipment tested and certified in one country does not need to be retested and recertified in other participating countries. The activities under this component will collectively cost around US\$ 11,665 million. Incremental activities will cost US\$ 2,607,500 which will be financed by the GEF.

17. **Component 3: ES&L Manufacturer Support Program** - This component has been primarily designed to address the barrier that manufacturers are often distrustful of standards and labels, and their objections can delay ES&L efforts or result in weakening of standards. During the Regional Stakeholder Workshop in August 2006, it was agreed that this manufacturer-related barrier is generic across the region, but must be dealt with in the context of each national economic and cultural setting. Therefore the activities will be carried out separately within each country, but with the sharing of lessons learned at the regular regional BRESL meetings being an important part of the component design. This component will include the provision of information to manufacturers on ways to improve product efficiency at modest cost; training on ways to use ES&L programs to increase profitability; and technical assistance to individual local manufacturers on these issues. The activities under this component will collectively cost about US\$ 6.065 million. Incremental activities will cost US\$ 791,400 which will be financed by the GEF.
  
18. **Component 4: ES&L Regional Coordination Program** - This component is intended to help countries to learn from each other so they can emulate successful efforts and avoid relearning mistakes that others have made. In addition, this component will include an activity to plan to follow-up activities when GEF funding ends, so that regional cooperation and progress and standards can continue. The activities under this component will collectively cost around US\$ 3,952 million. Incremental activities will cost US\$ 710,900 which will be financed by the GEF.
  
19. **Component 5: ES&L Pilot Projects** - This component is intended to provide flexibility to individual countries, or groupings of countries, to carry out activities that can showcase specific aspects of the various aspects of the design, facilitation and implementation of ES&L programs, including support activities. The specific pilot projects are on ES&L-related policy research and implementation, marketing and promotion of energy efficient equipment (equipment that exceeds MEPS) that is identified through energy labeling, consumer education on how to identify efficient products or the benefits of purchasing these products. Information on successful pilots will be shared with other countries, so they can replicate them. The activities under this component will collectively cost about US\$ 3.325 million. Incremental activities will cost US\$ 1,298,800 which will be financed by the GEF.

*Incremental Cost Matrix and Project Indicative Budget*

20. The proposed budget for each project component is shown in Table 11 below. In total we are requesting US\$ 7,800,000 from the GEF.

**Table 11: Summary Cost of Each Project Component (US\$)**

Project Component	Baseline	Incremental	Total Cost	%
1. ES&L Policy Making Program	7,245,700	1,611,400	8,857,100	24.7
2. ES&L Capacity Building Program	9,057,900	<u>2,607,500</u>	<u>11,665,400</u>	32.5
3. ES&L Manufacturer Support Program	5,273,200	791,400	6,064,600	16.9

Project Component	Baseline	Incremental	Total Cost	%
4. ES&L Regional Cooperation Program	3,240,700	710,900	3,951,600	11.0
5. ES&L Pilot Projects	2,026,600	1,298,800	3,325,400	9.3
Project Management Unit Support	1,236,800	780,000	2,016,800	5.6
<i>of which Monitoring and Evaluation</i>	0	75,000	0	
<b>Total</b>	28,080,900	7,800,000	35,880,900	100

21. Table 12A shows the distribution of the GEF budget among the BRESL countries. The total cost figure of each country represents the amount from their respective GEF-4 climate change allocation that is earmarked for the BRESL Project.

**Table 12A: Country Contribution to BRESL Project, by Activity (US\$)**

Country	Components					Project Mgm't	Total
	1	2	3	4	5		
Bangladesh	213,200	341,850	114,600	86,250	144,100	100,000	1,000,000
China	226,600	664,520	169,200	154,180	585,500	200,000	2,000,000
Indonesia	369,200	522,580	221,000	196,320	310,900	180,000	1,800,000
Pakistan	256,200	385,850	103,100	90,650	64,200	100,000	1,000,000
Thailand	300,000	321,650	85,500	92,750	100,100	100,000	1,000,000
Vietnam	246,200	371,050	98,000	90,750	94,000	100,000	1,000,000
<b>TOTAL</b>	<b>1,611,400</b>	<b>2,607,500</b>	<b>791,400</b>	<b>710,900</b>	<b>1,298,800</b>	<b>780,000</b>	<b>7,800,000</b>

22. Table 12B provides the summary of budget cost sharing among GEF and the co-financiers of the full-scale project by components/activities (*excluding the US\$50,000 GEF plus co-financing for the PDF-A exercise*).

**Table 12B: BRESL Cost Sharing Matrix (US\$)**

No	COMPONENTS	GEF	Nat'l Gov't	Reg'l Org	Private Sector	Foundations	Total
1	<b>ES&amp;L Policy-Making Program</b>	1,611,400	6,832,000	60,000	290,000	63,700	8,857,100
	Bangladesh		778,700				778,700
	China		1,000,700				1,000,700
	China: Energy Foundation					63,700	63,700
	Indonesia		1,186,700				1,186,700
	Republic of Korea		11,700				11,700
	Pakistan		282,700				282,700
	Thailand		2,134,000				2,134,000
	Vietnam		1,437,500				1,437,500
	ICA				290,000		290,000
CFL Harmonization Initiative				60,000		60,000	
2	<b>ES&amp;L Capacity-Building Program</b>	2,442,500	8,119,400	40,000	580,000	318,500	11,500,400
	Bangladesh		591,800				591,800

No	COMPONENTS	GEF	Nat'l Gov't	Reg'l Org	Private Sector	Foundations	Total
	China		5,008,400				5,008,400
	China: Energy Foundation					318,500	318,500
	Indonesia		817,300				817,300
	Republic of Korea		58,500				58,500
	Pakistan		214,800				214,800
	Thailand		853,600				853,600
	Vietnam		575,000				575,000
	ICA				580,000		580,000
	CFL Harmonization Initiative			40,000			40,000
3	<b>ES&amp;L Manufacturer Support Program</b>	<b>791,400</b>	<b>4,205,100</b>	<b>60,000</b>	<b>870,000</b>	<b>138,100</b>	<b>6,064,600</b>
	Bangladesh		529,500				529,500
	China		2,408,600				2,408,600
	China: Energy Foundation					138,100	138,100
	Indonesia		360,500				360,500
	Pakistan		192,200				192,200
	Thailand		426,800				426,800
	Vietnam		287,500				287,500
	ICA				870,000		870,000
CFL Harmonization Initiative			60,000			60,000	
4	<b>ES&amp;L Regional Cooperation Program</b>	<b>680,900</b>	<b>2,536,000</b>	<b>45,000</b>	<b>580,000</b>	<b>79,700</b>	<b>3,921,600</b>
	China		1,500,600				1,500,600
	China: Energy Foundation					79,700	79,700
	Indonesia		213,300				213,300
	Republic of Korea		7,800				7,800
	Thailand		426,800				426,800
	Vietnam		287,500				287,500
	ICA				580,000		580,000
	Australia Greenhouse Office		100,000				100,000
CFL Harmonization Initiative			40,000			40,000	
5	<b>ES&amp;L Pilot Projects</b>	<b>1,298,800</b>	<b>1,446,600</b>	<b>0</b>	<b>580,000</b>	<b>0</b>	<b>3,325,400</b>
	China		553,700				553,700
	Indonesia		178,600				178,600
	Thailand		426,800				426,800
	Vietnam		287,500				287,500
	ICA				580,000		580,000
6	<b>Regional Project Management</b>	<b>975,000</b>	<b>1,236,800</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2,211,800</b>

No	COMPONENTS	GEF	Nat'l Gov't	Reg'l Org	Private Sector	Foundations	Total
	Bangladesh		100,000				100,000
	China		528,000				528,000
	Indonesia		152,500				152,500
	Pakistan		36,300				36,300
	Thailand		210,000				210,000
	Vietnam		210,000				210,000
	<b>TOTAL</b>	<b>7,800,000</b>	<b>24,375,900</b>	<b>205,000</b>	<b>2,900,000</b>	<b>600,000</b>	<b>35,880,900</b>

**Table 12C: Summary of Project Co-Financing**

Contributor	Classification	Type	Amount (US\$)	Status
Bangladesh Government	Government	Cash & In-Kind	2,000,000	Confirmed
China Government	Government	Cash	10,068,000	Confirmed
		In-Kind	932,000	
China - Energy Foundation	Foundation	Cash	600,000	Confirmed
Indonesia Government	Government	Cash & In-Kind	2,908,900	Confirmed
Korea Government	Government	In-Kind	78,000	Confirmed
Pakistan Government	Government	Cash & In-Kind	726,000	
Thailand Government	Government	Cash & In-Kind	4,478,000	Confirmed
Vietnam Government	Government	Cash & In-Kind	3,085,000	Confirmed
Int'l Copper Association	Private	In-Kind	2,900,000	Confirmed
CFL Harmonization Initiative	Reg'l Organization	Cash	100,000	Confirmed
		In-kind	100,000	
Australian Greenhouse Office	Government	Cash	50,000	Confirmed
		In-kind	50,000	
CLASP	Reg'l Organization	Cash	5,000	Confirmed
<b>Total</b>			<b>28,080,900</b>	

23. Bangladesh: The Bangladesh co-financing budget (baseline) is US\$ 2.0 million. This includes budget for national and international experts from current and ongoing programs related to ES&L. The funds come from a number of sources, including development agencies, but the cost share is shown in the budget as a Bangladeshi government contribution.
24. China: The China co-financing budget (baseline) is US\$ 11.0 million. The largest portion is US\$ 7.551 million for equipment, staff, and training for test laboratories for six products. US\$ 2.517 million is for manufacturer promotion; US\$ 755,000, US\$ 101,000, and US\$ 76,000 are for in-kind salary contributions from SAC; manufacturers; and NDRC, respectively.
25. Indonesia. The co-financing budget from Indonesia is basically the budget allocated for ES&L-related activities by the DGEEU. This amounts to US\$ 2,908,900.
26. Korea: The Korean co-financing budget (baseline) is US\$ 78,000. This includes the man-days contributed by two Korean experts at each of the 5 Technical Working Group meetings each year. It also includes an estimated US\$ 2,600 per year of S&L-related program costs.

27. Pakistan: The co-financing budget (baseline) from Pakistan is US\$ 626,000, which basically is the budget for the Ministry of Environment's EC&EE activities, which include among others ES&L, under its "National Awareness Campaign on Energy and Environment Conservation" (ACE) program. Some in-kind contribution of about US\$ 100,000 in terms of staff time and facility use from the MOE's Appliance Testing Laboratory is part of the country's co-financing for BRESL.
28. Thailand: The Thai co-financing budget (baseline) is US\$ 4.478 million. This includes US\$ 0.228 million as in-kind salary contributions from the Thai government, and an estimated US\$ 4.25 million from the government's current and ongoing national ES&L programs operated by DEDE and EGAT.
29. Vietnam: The Vietnam co-financing budget (baseline) is US\$ 3.085 million. This includes US\$ 0.285 million as in-kind salary contributions from the Vietnamese government, and an estimated US\$ 2.8 million from the government's current and ongoing national ES&L programs operated by EVN, MOST, and MOI.
30. Australian Government Office – This Australian government agency is contributing US\$ 100,000 as co-financing for the regional harmonization activities that will be carried out under the BRESL.
31. International Copper Association (ICA): In China and in Southeast Asia (Indonesia, Malaysia, Thailand, and Vietnam), ICA is working on three of the core BRESL products: air conditioners, electric motors, and fluorescent lamp ballasts. ICA's in-kind contribution to BRESL (US\$ 2.90 million) involves support for development of MEPS and labeling schemes, market awareness and education, and technical assistance to manufacturers. The following are the work program activities of ICA for 2007-2012 that it has agreed to be subsumed under BRESL:

Country	ES&L Program Development	ES&L Market Education	Capacity Building for Local Manufacturers
Bangladesh	Motors, Transformers, Air Conditioners		Motors, Transformers, Air Conditioners
China	Motors, Transformers, Magnetic Ballasts, Air Conditioners, Water Heaters	Motors, Transformers, Magnetic Ballasts, Air Conditioners, Water Heaters	Motors, Water Heaters, Magnetic Ballasts
Thailand		Motors	
Vietnam	Motors, Transformers	Motors	Motors

32. The International CFL Harmonization Initiative is an alliance of governments, private sector companies, associations, and non-governmental organizations that is working together to develop a single, improved international harmonized test protocol for compact fluorescent lamps; to carry out round-robin testing in order to validate the new test protocol; to develop a set of discrete performance levels that can be adopted on a voluntary basis by any country; and to share these results with the wider international community. Cost-sharing activities (US\$ 200,000) include round-robin testing; a series of international events; an international web site ([www.apec-esis.org/cfl](http://www.apec-esis.org/cfl)); consulting input and analysis; and in-kind participation by industry.
33. The Energy Foundation in China has also committed US\$ 600,000 for activities focusing on ES&L policy making and capacity building, appliance/equipment manufacturer support and regional cooperation activities on ES&L.

34. CLASP, which is active in ES&L capacity building in the region, has also committed US\$ 5,000 cash technical assistance support for the ES&L policymaking and regional cooperation programs of the BRESL project.
35. Table 13 shows the incremental cost matrix. The baseline and alternative courses of actions are presented together with the costs of achieving them.



**Table 13: Incremental Cost Matrix**

<b>Component</b>		<b>Baseline</b>	<b>Alternative</b>	<b>Increment</b>
<b>Global Environmental Benefits</b>		<ul style="list-style-type: none"> <li>• EE products installed from 2004 to 2011 will use 1,071,491 GWh/year in 2011</li> <li>• Limited GHG emissions reduction of about 904.7 MMT/yr in 2011 due to limited implementation of ES&amp;L programs.</li> </ul>	<p>Cumulative 37.3 MMT CO2 reduced by project end, attributed to 2.3% reduction in electricity consumption</p>	<p>2.5% reduction in annual growth rate of GHG emissions by about 24.8 MMT/yr in 2011</p>
	<b>Domestic Benefits</b>	<ul style="list-style-type: none"> <li>• Limited energy savings from the application of EE appliance/equipment</li> <li>• Proliferation of appliance/equipment that are energy inefficient in the local markets</li> </ul>	<ul style="list-style-type: none"> <li>• New energy efficient products are available and affordable in local appliance and equipment markets</li> <li>• Regulations and enforcement of energy standards and labels</li> <li>• Reduced dependence on energy inefficient energy using equipment/appliance</li> <li>• Predominance of better quality and EE equipment/appliances in local and regional markets</li> </ul>	<ul style="list-style-type: none"> <li>• Significant improvement in the implementation of ES&amp;L programs in Asian countries</li> <li>• Built/developed capacity on ES&amp;L programs, and in the local manufacturing of EE products</li> <li>• Enhanced campaigns and advocacy on the use of EE products</li> <li>• Improved policies and regulatory regimes supportive of ES&amp;L programs and utilization of EE products</li> </ul>
<b>Component 1: ES&amp;L Policy-Making Program</b>		<p><b>Business as Usual</b></p> <p>China and Korea have substantial ES&amp;L programs. Thailand has strong labeling program but only a few standards. ES&amp;L programs just starting in Viet Nam. Exploratory efforts in Bangladesh and Indonesia.</p>	<p><b>Proposed Situation</b></p> <p>Substantial and on-going ES&amp;L programs in all participating countries.</p>	<p><b>Additional Features</b></p> <p>Programs in Thailand, and Viet Nam significantly expand, Bangladesh, Indonesia and Pakistan begin programs.</p>
	<b>Domestic Benefits</b>	<ul style="list-style-type: none"> <li>• Substantial energy and operating cost savings in China and Korea, moderate in Thailand, small in Viet Nam</li> <li>• Many ES&amp;L programs are haphazard and do not operate smoothly.</li> </ul> <p><b>Global Benefits</b></p> <ul style="list-style-type: none"> <li>• Moderate amount of greenhouse gas emissions reductions, primarily in China and Korea.</li> </ul>	<p><b>Domestic Benefits</b></p> <ul style="list-style-type: none"> <li>• Substantial energy and operating cost savings in all participating countries</li> <li>• ES&amp;L programs operate more smoothly and have increased support from both manufacturers and consumers.</li> </ul> <p><b>Global Benefits</b></p> <ul style="list-style-type: none"> <li>• Substantial greenhouse gas emissions reductions.</li> </ul>	<p><b>Domestic Benefits</b></p> <ul style="list-style-type: none"> <li>• Energy savings and operating cost savings increase substantially in all countries.</li> <li>• Locally produced products more efficient and advanced and better able to compete in world markets.</li> </ul> <p><b>Global Benefits</b></p> <ul style="list-style-type: none"> <li>• Greenhouse gas savings from ES&amp;L programs more than double.</li> <li>• Additional successful policy examples for</li> </ul>

Component	Baseline		Alternative		Increment	
<b>Component 2: ES&amp;L Capacity- Building Program</b>	<p><b>COST</b></p> <p>US\$ 7,245,700</p> <p><b>Business as Usual</b></p> <ul style="list-style-type: none"> <li>• Training is limited and ad hoc</li> <li>• A few country-specific analyses conducted which vary in quality</li> <li>• Test laboratories strong in some countries but weak in others</li> <li>• Limited data tracking conducted in just a few countries</li> </ul> <p><b>Domestic Benefits</b></p> <ul style="list-style-type: none"> <li>• Capacity grows slowly, supporting modest improvements in energy efficiency</li> </ul> <p><b>Global Benefits</b></p> <ul style="list-style-type: none"> <li>• Capacity grows slowly, supporting modest reductions in greenhouse gas emissions relative to current products</li> </ul>	<p>US\$ 8,857,100</p> <p><b>Proposed Situation</b></p> <ul style="list-style-type: none"> <li>• Training provided in all participating countries</li> <li>• Regional analyses of good quality</li> <li>• Testing infrastructure strengthened in weak countries</li> <li>• Most participating countries collect and report basic data annually</li> </ul> <p><b>Domestic Benefits</b></p> <ul style="list-style-type: none"> <li>• Capacity increases significantly in many of the participating countries add staff and improve capabilities</li> </ul> <p><b>Global Benefits</b></p> <ul style="list-style-type: none"> <li>• Capacity increases significantly, enabling larger emissions reductions</li> </ul>	<p>other countries to replicate.</p> <p><b>US\$ 1,611,400</b></p> <p><b>Additional Features</b></p> <ul style="list-style-type: none"> <li>• Public officials, consultants and others understand and can carry-out ES&amp;L processes and procedures</li> <li>• Regional analyses and working groups provide foundation for national actions-- (more than 20 new national standards-- about 4 new product standards per country)</li> <li>• Data collected that allows monitoring of progress in each country and development of steps to address weaknesses</li> </ul> <p><b>Domestic Benefits</b></p> <ul style="list-style-type: none"> <li>• Increased capacity, supporting significant improvements in national ES&amp;L programs, reducing energy use and consumer electricity bills</li> </ul> <p><b>Global Benefits</b></p> <ul style="list-style-type: none"> <li>• Increased capacity enables standards which significantly reduce GHG emissions.</li> <li>• Countries outside the region have additional models to emulate on ways to pursue ES&amp;L programs.</li> </ul>			
<b>Component 3: ES&amp;L Manufacturer Support Program</b>	<p><b>COST</b></p> <p>US\$ 9,057,900</p> <p><b>Business as Usual</b></p> <ul style="list-style-type: none"> <li>• Manufacturers generally skeptical about ES&amp;L efforts and are a barrier to ES&amp;L progress</li> <li>• Manufacturers often believe it will be difficult and expensive to improve product efficiency</li> </ul> <p><b>Domestic Benefits</b></p> <ul style="list-style-type: none"> <li>• Manufacturer concerns reduce progress</li> </ul>	<p><b>US\$ 1,665,400</b></p> <p><b>Proposed Situation</b></p> <ul style="list-style-type: none"> <li>• Manufacturers understand opportunities to use ES&amp;L to increase profits</li> <li>• Manufacturers understand and implement modest-cost strategies for increasing product efficiency</li> </ul> <p><b>Domestic Benefits</b></p> <ul style="list-style-type: none"> <li>• Sales of value-added efficient equipment</li> </ul>	<p><b>US\$ 2,607,500</b></p> <p><b>Additional Features</b></p> <ul style="list-style-type: none"> <li>• Manufacturers more supportive of ES&amp;L efforts, particularly efforts that increase opportunities to sell higher profit products with low incremental costs</li> </ul> <p><b>Domestic Benefits</b></p> <ul style="list-style-type: none"> <li>• Increased manufacturer profits</li> </ul>			

Component		Baseline		Alternative		Increment	
		<p>on ES&amp;L</p> <ul style="list-style-type: none"> <li>• Profitability not affected</li> </ul> <p><b>Global Benefits</b></p> <ul style="list-style-type: none"> <li>• Most of the benefits of energy savings and emissions reductions are not realized</li> </ul> <p><b>COST</b></p> <p>US\$ 5,273,200</p>	<p>increase</p> <ul style="list-style-type: none"> <li>• Manufacturer support allows stronger ES&amp;L programs</li> </ul> <p><b>Global Benefits</b></p> <ul style="list-style-type: none"> <li>• Manufacturers in region more supportive of ES&amp;L efforts in other countries</li> </ul> <p><b>COST</b></p> <p>US\$ 6,064,600</p>	<ul style="list-style-type: none"> <li>• Reduced consumer energy bills</li> <li>• Energy savings</li> </ul> <p><b>Global Benefits</b></p> <ul style="list-style-type: none"> <li>• Greater emissions reductions</li> </ul> <p><b>COST</b></p> <p>US\$ 791,400</p>			
<b>Component 4: ES&amp;L Regional Cooperation Program</b>	<p><b>Business as Usual</b></p> <ul style="list-style-type: none"> <li>• Each country pursues ES&amp;L largely on their own</li> <li>• Modest amounts of regional cooperation</li> </ul> <p><b>Domestic Benefits</b></p> <ul style="list-style-type: none"> <li>• Modest energy and energy bill savings</li> </ul> <p><b>Global Benefits</b></p> <ul style="list-style-type: none"> <li>• Modest emissions reductions</li> </ul>	<p><b>Proposed Situation</b></p> <ul style="list-style-type: none"> <li>• Extensive regional collaboration</li> <li>• Countries can share analyses and experiences</li> <li>• Gradual move towards harmonized standards</li> </ul> <p><b>Domestic Benefits</b></p> <ul style="list-style-type: none"> <li>• Significantly increased energy and bill savings</li> <li>• Stature of and support for ES&amp;L efforts increase in the region</li> </ul> <p><b>Global Benefits</b></p> <ul style="list-style-type: none"> <li>• Much larger emissions reductions</li> </ul>	<p><b>Additional Features</b></p> <ul style="list-style-type: none"> <li>• Shared analyses and experiences make it easier for individual countries to adopt new standards and labels</li> <li>• Standards increasingly harmonized with countries in the region</li> </ul> <p><b>Domestic Benefits</b></p> <ul style="list-style-type: none"> <li>• Substantial energy and bill savings</li> <li>• Increased support for ES&amp;L efforts</li> </ul> <p><b>Global Benefits</b></p> <ul style="list-style-type: none"> <li>• Emissions reductions more than double</li> <li>• Example of regional cooperation for other regions to emulate</li> </ul>				
<b>COST</b>	US\$ 3,240,700	US\$ 3,953,600	US\$ 710,900				
<b>Component 5: ES&amp;L Pilot Projects</b>	<p><b>Business as Usual</b></p> <ul style="list-style-type: none"> <li>• Modest existing efforts continue</li> </ul> <p><b>Domestic Benefits</b></p> <ul style="list-style-type: none"> <li>• Some consumers familiar with efficient products, how to identify them and their benefits but most consumers are not familiar with efficient products.</li> </ul>	<p><b>Proposed Situation</b></p> <ul style="list-style-type: none"> <li>• Pilot projects undertaken in 6 countries</li> <li>• Successful pilots continued in originating country and replicated in several other countries</li> </ul> <p><b>Domestic Benefits</b></p> <ul style="list-style-type: none"> <li>• Number of consumers familiar with efficient products increases significantly.</li> </ul>	<p><b>Additional Features</b></p> <ul style="list-style-type: none"> <li>• On-going government procurement programs for efficient equipment in at least 3 countries</li> <li>• On-going consumer education efforts in at least 3 countries</li> </ul> <p><b>Domestic Benefits</b></p> <ul style="list-style-type: none"> <li>• Informed consumers much more likely to purchase efficient products.</li> </ul>				

Component	Baseline		Alternative		Increment
	Global Benefits		Global Benefits		
	• Modest emissions reductions.		• Much greater emissions reductions		• Substantial incremental reductions in emissions.
<b>COST</b>		US\$ 2,026,600		US\$ 3,325,400	US\$ 1,298,800
Project Management Unit Support Cost (including M&E)		US\$ 1,236,800		<del>US\$ 2,016,800</del>	<del>US\$ 780,000</del>
<b>TOTAL COST</b>		<b>US\$ 28,080,900</b>		<b>US\$ 35,880,900</b>	<b>US\$ 7,800,000</b>

**PART II: Logical Framework Analysis (Project Planning Matrix)**

**Table 14: Project Planning Matrix (PPM)**

Project Strategy	Objectively Verifiable Indicators			Target	Means of Gauging Success	Critical Assumptions
	Indicator	Baseline				
<b>GOAL:</b> Reduction of GHG emissions from thermal power generation in selected Asian countries.	<ul style="list-style-type: none"> <li>Reduction in GHG emissions from thermal power generation</li> <li>Reduction in the annual growth rate of GHG emissions from thermal power generation.</li> </ul>	<ul style="list-style-type: none"> <li>CO2 emissions generation in Year 0 = 435.5 MMT/yr</li> <li>CO2 emission generation in Year 5 = 904.7 MMT/yr</li> </ul>	<ul style="list-style-type: none"> <li>CO2 emission generation in Year 5 = 880.0 MMT/yr</li> <li>CO2 emission reduction = 24.8 MMT/yr by Year 5</li> <li>2.7 % per year compared to business-as-usual (BAU) by project end</li> </ul>	<ul style="list-style-type: none"> <li>Monitoring reports on changes in average equipment efficiency and sales from participating governments to the PMU</li> </ul>	<ul style="list-style-type: none"> <li>Continuous and committed support and participation from governments of participating countries</li> </ul>	
<b>OBJECTIVE:</b> Removal of barriers to the successful implementation of energy standards and labeling policies and programs in Asia.	<ul style="list-style-type: none"> <li>Reduction in total electricity use in the residential, commercial and industrial sectors.</li> <li>Reduction in average energy use of targeted products being sold by Year 5.</li> <li>Market share of energy efficient appliances and equipment</li> </ul>	<ul style="list-style-type: none"> <li>Electricity usage in Year 0 = 515,829 GWh/year</li> <li>Electricity usage in Year 5 = 1,071,491 GWh/yr</li> <li>Increase in efficiency of products is at rate of 0.2 to 1% per year</li> </ul>	<ul style="list-style-type: none"> <li>Electricity usage in Year 5 = 1,043,691 GWh/yr</li> <li>Electricity savings in Year 5 = 27,799 GWh/yr</li> <li>10% energy savings from new standards (4% for motors)</li> <li>Increase in efficiency of products at rate of 0.4 to 2% per year (varying by product) from Year 5 onward due to labeling</li> <li>Market share of efficient products increase 25% in year 5 relative to baseline</li> </ul>	<ul style="list-style-type: none"> <li>Official publications or documents on sales and saturation rates of energy-efficient equipment provided by each selected country.</li> <li>Annual reporting on progress from the participating countries</li> </ul>	<ul style="list-style-type: none"> <li>Interest in energy issues will remain at current levels or will increase over time</li> <li>Proactive participations of equipment suppliers, engineering firms, and financial institutions</li> </ul>	
<b>• OUTCOMES</b>						
<b>Component 1: ES&amp;L Policy-Making Program. Establishment of legal and regulatory basis for removing lowest EE technologies</b>	<ul style="list-style-type: none"> <li>Clear ES&amp;L principles expressed in laws and regulations of participating countries</li> </ul>	<ul style="list-style-type: none"> <li>Except for China and Korea, countries lack clear regulatory and</li> </ul>	<ul style="list-style-type: none"> <li>4 countries adopt new laws and regulations on ES&amp;L by Year 3</li> <li>10% energy savings in</li> </ul>	<ul style="list-style-type: none"> <li>Official publications or documents on energy-efficiency regulations and</li> </ul>	<ul style="list-style-type: none"> <li>Continued political support by governments in participating countries</li> </ul>	

Project Strategy	Objectively Verifiable Indicators			Means of Gauging Success	Critical Assumptions
	Indicator	Baseline	Target		
<p><i>from the market and promoting high-efficiency technologies.</i></p>	<p>by Year 3.</p> <ul style="list-style-type: none"> <li>• New minimum standards for air conditioners (A/Cs).</li> <li>• New minimum standards for refrigerators</li> <li>• New minimum standards for fluorescent ballasts.</li> <li>• New minimum standards for motors.</li> <li>• Quality standards for compact fluorescent lamps (CFLs).</li> <li>• Labeling scheme implementation.</li> </ul>	<p>legal framework for MEPS and mandatory labeling</p>	<p>new AC by Year 5; approved in 4 countries by Year 3.</p> <ul style="list-style-type: none"> <li>• 10% energy savings in new refrigerators by Year 5; approved in 4 countries by Year 3.</li> <li>• 30% reduction in losses from new ballasts by Year 5; approved in 4 countries by Year 3.</li> <li>• At least 4% energy savings for new motors by Year 5; approved in 4 countries by Year 3.</li> <li>• 15% reduction in electricity use from new electric fans by Year 5; approved in 4 countries by Year 3.</li> <li>• 20% reduction in electricity use from rice cookers by Year 5; approved in China by Year 3.</li> <li>• Quality standards for CFLs approved in at least 4 countries by Year 3.</li> <li>• Labels in use for at least two products in 5 countries by Year 5.</li> </ul>	<p>policies provided by each selected country.</p> <ul style="list-style-type: none"> <li>• National statistics on standards and labeling programs as reported on APEC Energy Standards Information System (<a href="http://www.apec-esis.org">www.apec-esis.org</a>)</li> <li>• Annual reports to the PMU by each participating country</li> <li>• Project visits and surveys.</li> </ul>	<p>to advance legislation.</p>
<p><b>Activity 1.1: Strengthening of policy context for ES&amp;L actions</b> <b>Supporting Activities:</b></p>	<ul style="list-style-type: none"> <li>• Approved laws and policy documents setting clear principles</li> </ul>	<ul style="list-style-type: none"> <li>• Limited awareness and support among energy</li> </ul>	<ul style="list-style-type: none"> <li>• 3 countries that currently lack ES&amp;L laws and policies</li> </ul>	<ul style="list-style-type: none"> <li>• Official publications or documents on energy testing,</li> </ul>	<ul style="list-style-type: none"> <li>• Interest of the policy-makers in EE remains at least at the current</li> </ul>

Project Strategy		Objectively Verifiable Indicators			Means of Gauging Success	Critical Assumptions
Indicator	Baseline	Target				
<ul style="list-style-type: none"> <li>Activities that support the implementation of the recommendations for more favorable policy principles and a more favorable regulatory framework in the core-countries for market transformation.</li> <li>Policy research study in Thailand on restructuring national ES&amp;L program based on experiences of other countries to make them more effective.</li> </ul>	<ul style="list-style-type: none"> <li>Adopted and enforced minimum standards and labels</li> <li>No. of countries implementing ES&amp;L programs for A/Cs</li> <li>No of countries implementing ES&amp;L programs for refrigerators</li> <li>No. of countries implementing ES&amp;L programs for fluorescent ballasts</li> <li>No of countries implementing ES&amp;L programs for motors</li> <li>No. of countries implementing</li> </ul>	<ul style="list-style-type: none"> <li>China and Korea implement mandatory labeling</li> <li>Implementation of MEPS and labeling in China only partially effective</li> <li>For other countries, only voluntary labeling, and only 1 MEPS passed on average per country during project period</li> </ul>	<ul style="list-style-type: none"> <li>In Thailand, at least 4 new standards adopted and labeling scales revised for at least 2 products</li> </ul>	<ul style="list-style-type: none"> <li>standards, and labeling provided by each selected country</li> <li>Annual reports to the PMU by each participating country</li> <li>Evaluation report on performance of Thai ES&amp;L program</li> <li>Market survey results</li> </ul>	<ul style="list-style-type: none"> <li>level</li> <li>Commitments for allocation of public budgets for EE standards and labels increases</li> </ul>	
<p><b>Activity 1.2: Adoption and implementation of ES&amp;L regulations</b></p> <p><b>Supporting Activities:</b></p> <ul style="list-style-type: none"> <li>Implementation of standards and labeling programs for A/Cs, refrigerators, fluorescent ballasts, motors, CFLs and electric fans</li> <li>Provision of technical assistance to individual countries to help them adapt workgroup products (Activity 2.2) to individual country needs.</li> </ul>	<ul style="list-style-type: none"> <li>Adopted and enforced minimum standards and labels</li> <li>No. of countries implementing ES&amp;L programs for A/Cs</li> <li>No of countries implementing ES&amp;L programs for refrigerators</li> <li>No. of countries implementing ES&amp;L programs for fluorescent ballasts</li> <li>No of countries implementing ES&amp;L programs for motors</li> <li>No. of countries implementing</li> </ul>	<ul style="list-style-type: none"> <li>4 countries implementing new standards and labels for A/Cs by end of year 4</li> <li>4 countries implementing new standards and labels for refrigerators by end of year 4</li> <li>4 countries implementing new standards and labels for fluorescent ballasts by end of year 4</li> <li>4 countries implementing new standards and labels for CFLs by end of year 4</li> <li>4 countries implementing new standards and labels for electric fans by end of year 4</li> <li>1 country implementing new standards and labels</li> </ul>	<ul style="list-style-type: none"> <li>Official publications or documents on monitoring or enforcement programs provided by each selected country</li> <li>Annual reports to the PMU by each participating country</li> <li>National statistics on standards and labeling programs as reported on APEC Energy Standards Information System (<a href="http://www.apec-esis.org">www.apec-esis.org</a>)</li> </ul>	<ul style="list-style-type: none"> <li>Interest of the policy-makers in EE remains at minimum at the current level</li> <li>Mechanisms to monitor and enforce standards and labels are in place</li> </ul>		

Project Strategy	Objectively Verifiable Indicators			Means of Gauging Success	Critical Assumptions
	Indicator	Baseline	Target		
	<p>ES&amp;L programs for CFLs</p> <ul style="list-style-type: none"> <li>No of countries implementing ES&amp;L programs for electric fans</li> </ul>		for rice cookers by end of year 4		
<p><b>Component 2: ES&amp;L Capacity-Building Program. Building of institutional and individual capacity to secure on-the-ground implementation of regulatory frameworks, as well as actual standards and labeling programs.</b></p>	<ul style="list-style-type: none"> <li>New testing standards and testing facilities in place and operational by Year 4.</li> <li>Mutual recognition agreements in place and enforced for product testing and posting of certification information by Year 4</li> <li>Web-based posting procedures for certified equipment information developed and implemented by Year 5</li> <li>Countries with annual data collection and reporting systems in place and being implemented</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li>At least one for the targeted products in at least 3 countries</li> <li>At least 3 participating countries sign mutual recognition agreements by Year 4.</li> <li>At least 4 participating countries are posting certification information by Year 5</li> <li>Certification information posted on at least 500 products by Year 5</li> <li>At least 4 participating countries have such procedures in place by end of Year 3</li> </ul>	<ul style="list-style-type: none"> <li>PMU annual progress reports</li> <li>Mutual Recognition Agreements (MRAs) between appropriate agencies in each country</li> </ul>	<ul style="list-style-type: none"> <li>Interest of key individual and organizations remains at least at current levels throughout the project</li> <li>Program managers willing to accept test results from accredited labs in other countries</li> <li>Organizations involved with testing have some flexibility to accommodate needs of other countries</li> </ul>
<p><b>Activity 2.1: Training to strengthen and enable public institutions to support development and implementation of EE standards and labeling Supporting Activities:</b></p>	<ul style="list-style-type: none"> <li>EE professional public officers and consultants trained</li> <li>Number of trainees that are applying ES&amp;L principles in their work</li> </ul>	<ul style="list-style-type: none"> <li>Limited, one-off regional workshops related to ES&amp;L</li> <li>No systematic and sustained training and hands-on</li> </ul>	<ul style="list-style-type: none"> <li>At least 6 EE professional public officers and consultants per participating country trained by end of year 1</li> <li>60% of trainees engaged in national ES&amp;L</li> </ul>	<ul style="list-style-type: none"> <li>Annual reports by each participating country to PMU</li> </ul>	<ul style="list-style-type: none"> <li>Sustained interest of governments and in-country associations</li> </ul>



Project Strategy		Objectively Verifiable Indicators			Means of Gauging Success	Critical Assumptions
Indicator	Baseline	Target				
<ul style="list-style-type: none"> <li>Carry out short-term training courses on EE technical standards and labeling, product testing, and data collection and reporting for public officers such as energy and environmental policy-makers, officers at standards and testing organizations, utility DSM offices as well as manufacturer staff involved with EE products and regulations</li> </ul> <p><b>Activity 2.2: Capacity enhancement in the implementation and labeling for the 6 targeted products</b></p> <p><b>Supporting Activities:</b></p> <ul style="list-style-type: none"> <li>Formation of regional product working groups that meet at least annually for each of the 6 targeted products.</li> <li>Working groups share information on activities in each participating country and undertake joint research and analysis to facilitate development and implementation of standards and labeling in individual countries.</li> </ul> <p><b>Activity 2.3: Strengthening of national and regional testing</b></p>	<ul style="list-style-type: none"> <li>meetings related to ES&amp;L planning and implementation in the region</li> </ul>	<ul style="list-style-type: none"> <li>program implementation by Year 2</li> </ul>	<ul style="list-style-type: none"> <li>PMU reports.</li> <li>Working group reports</li> <li>Annual reports of each participating country to PMU</li> </ul>	<ul style="list-style-type: none"> <li>Sustained interest of countries and associations</li> <li>Countries allocate staff time, and at least some budget, to indicate buy-in to Working Groups</li> </ul>		
<ul style="list-style-type: none"> <li>Number of private sector and government participants in regional product working groups.</li> <li>Number of improved government-supported national ES&amp;L programs implemented</li> <li>Implemented National ES&amp;L programs incorporate recommendations of working groups</li> </ul>	<ul style="list-style-type: none"> <li>No regional working groups on end-use policies or ES&amp;L related to five of the six target products</li> <li>Meetings on CFL harmonization and the Efficient Lighting Initiative (ELI) occur in Asia region on average 1-2 times per year, with 1-2 people attending from each participating country</li> </ul>	<ul style="list-style-type: none"> <li>At least 2 officials from each of the participating countries participate in at least 2 product-specific working groups</li> <li>At least 4 national ES&amp;L programs significantly enhanced</li> <li>At least 4 countries participating in each working group use working group products to adopt new standards and/or labels</li> </ul>	<ul style="list-style-type: none"> <li>4 countries adopt improved test procedures</li> </ul>	<ul style="list-style-type: none"> <li>Annual reports of each participating</li> </ul>	<ul style="list-style-type: none"> <li>Sustained interest of public officials and</li> </ul>	
<ul style="list-style-type: none"> <li>Number of improved test procedures</li> </ul>	<ul style="list-style-type: none"> <li>No systematic regional discussion</li> </ul>	<ul style="list-style-type: none"> <li>4 countries adopt improved test procedures</li> </ul>	<ul style="list-style-type: none"> <li>Annual reports of each participating</li> </ul>	<ul style="list-style-type: none"> <li>Sustained interest of public officials and</li> </ul>		

Project Strategy		Objectively Verifiable Indicators			Means of Gauging Success		Critical Assumptions
Indicator	Baseline	Target					
<p><b>and certification infrastructure Supporting Activities:</b></p> <ul style="list-style-type: none"> <li>Product-specific working groups address testing issues including commonalities, differences and modifications to testing standards to improve testing accuracy and regional cooperation</li> <li>Survey of testing laboratory availability and capabilities in participating countries and identification of gaps</li> <li>TA in the development and operation of ES&amp;L testing facilities</li> <li>Drafting, negotiation and execution of Memorandum of Understanding and MRAs on testing and certification</li> <li>Market monitoring system for ES&amp;L design &amp; implementation in China, to include development of a detailed market monitoring scheme, a sampling methodology, and conduct of market monitoring tests.</li> </ul>	<p>developed and adopted by Year 3.</p> <ul style="list-style-type: none"> <li>Number of improved testing facilities constructed and operational by end of project</li> <li>Number of countries with testing and certification procedures in place</li> <li>Round-robin testing completed to assess comparability of testing between countries</li> <li>Number of mutual recognition agreements (MRAs) on product testing and certification signed and implemented by Year 4.</li> <li>Web-based posting procedures developed and implemented by Year 4.</li> <li>Labeling accuracy in China</li> </ul>	<p>on coordination of test procedures for any of the target products and no round-robin testing in the region</p> <ul style="list-style-type: none"> <li>Three countries have certification procedures in place</li> <li>In 2004-2005, there was one regional meeting and study tour to Australia to discuss harmonized ballast test procedure; but it has not yet been adopted by ASEAN countries</li> <li>No active MRAs in place covering the six target products in the BRESL countries</li> <li>No web posting of results of energy performance testing for any of the six target products</li> </ul>	<p>on at least one product</p> <ul style="list-style-type: none"> <li>At least 1 improved testing facility for targeted products in at least 2 countries.</li> <li>At least 6 countries have certification procedures in place by end of Year 3</li> <li>Round-robin testing completed by end of Year 4</li> <li>At least 3 countries sign and implement MRAs with other participating countries.</li> <li>At least half of the participating countries post information on testing procedures on the web.</li> <li>Significant increase in the accuracy of labels in the last year of the market monitoring scheme under this project relative to the first year</li> </ul>	<p>country to PMU reports.</p> <ul style="list-style-type: none"> <li>Report on round-robin testing results</li> <li>Memorandums of Understanding on regional cooperation on testing and certification</li> <li>Information posted on APEC Energy Standards Information System (<a href="http://www.apec-esis.org">www.apec-esis.org</a>)</li> <li>Documentation of market monitoring system results in China</li> </ul>	<p>others involved in testing and certification</p>		
<p><b>Activity 2.4: Strengthening of data collection and reporting procedures on equipment</b></p>	<ul style="list-style-type: none"> <li>Model procedures provided to participating countries</li> </ul>	<ul style="list-style-type: none"> <li>No systematic data collection and reporting on end-</li> </ul>	<ul style="list-style-type: none"> <li>Model procedures completed by end of Year 1</li> </ul>	<ul style="list-style-type: none"> <li>Documentation of Model procedures</li> <li>Annual PMU report</li> </ul>	<ul style="list-style-type: none"> <li>Countries willing to collect data once shown importance of</li> </ul>		

Project Strategy		Objectively Verifiable Indicators			Means of Gauging Success		Critical Assumptions
Indicator		Baseline	Target				
<p>availability and sales by efficiency level in participating countries</p> <p><b>Supporting Activities:</b></p> <ul style="list-style-type: none"> <li>Development of model data collection and reporting procedures</li> <li>TA to individual countries seeking to implement procedures</li> </ul>		<ul style="list-style-type: none"> <li>Number of countries receiving TA</li> <li>Number of countries with annual data collection and reporting procedures in place</li> </ul>	<ul style="list-style-type: none"> <li>use energy, including unit size; operating hours and conditions; unit energy consumption or efficiency; stock; annual sales; and efficiency potential</li> </ul>	<ul style="list-style-type: none"> <li>TA provided to at least 5 countries by end of Year 2</li> <li>At least 4 participating countries have such procedures in place by end of Year 3 and collect data annually thereafter</li> </ul>	<ul style="list-style-type: none"> <li>Annual reports to PMU of each participating country</li> </ul>	<ul style="list-style-type: none"> <li>regular data collection to monitor implementation and aid ES&amp;L program refinements</li> <li>Manufacturers willing cooperate and provide data, as long as request not onerous</li> </ul>	
<p><b>Component 3: ES&amp;L Manufacturer Support Program.</b></p> <p>Provision of information and technical assistance to manufacturers of covered products</p>		<ul style="list-style-type: none"> <li>Total number of local manufacturers manufacturing EE equipment/appliance by Year 5</li> <li>Number of high efficiency models produced</li> <li>Volume of EE products sold</li> <li>Percent of manufacturers involved in project who agree that ES&amp;L can provide opportunities to increase profitability</li> </ul>	<ul style="list-style-type: none"> <li>Market shares of EE products in participating countries are low (typically less than 5-10%)</li> <li>Local manufacturers or suppliers do not produce EE products</li> <li>No current survey data on manufacturer attitudes but this % is assumed to be low</li> </ul>	<ul style="list-style-type: none"> <li>At least 5 local manufacturers begin producing EE equipment</li> <li>Manufacturers in the region add at least 50 EE models to their product lines</li> <li>Sales of EE products increase at least 25% by Year 5</li> <li>50% of manufacturers agree that ES&amp;L can provide opportunities to increase profitability</li> </ul>	<ul style="list-style-type: none"> <li>Survey of manufacturers receiving reports and technical assistance</li> <li>Annual reports to PMU of each participating country</li> </ul>	<ul style="list-style-type: none"> <li>Manufacturers will use information they are provided.</li> <li>Manufacturers receiving information will be better able to adapt to standards and will be more supportive of standards.</li> </ul>	
<p><b>Activity 3.1: Analysis and preparation of technical reports on each of the 6 covered products; reports cover techniques for improving product efficiency and the costs</b></p>		<ul style="list-style-type: none"> <li>Technical reports completed</li> <li>Manufacturer ratings of usefulness of technical reports</li> <li>Percent of</li> </ul>	<ul style="list-style-type: none"> <li>During 2004-2006, benchmarking reports prepared for APEC covering air conditioners, electric motors,</li> </ul>	<ul style="list-style-type: none"> <li>5 technical reports completed by Year 2</li> <li>Technical reports receive average rating from manufacturers of at least 4 on a 1-5 scale by Year</li> </ul>	<ul style="list-style-type: none"> <li>Technical reports on products</li> <li>Survey of manufacturers</li> </ul>	<ul style="list-style-type: none"> <li>Manufacturers open to new ideas on ways to improve their products</li> </ul>	

Project Strategy		Objectively Verifiable Indicators			Means of Gauging Success		Critical Assumptions
Indicator	Baseline	Target	Success	Assumptions	Assumptions	Assumptions	
<p>involved.</p> <p><b>Supporting Activities</b></p> <ul style="list-style-type: none"> <li>• Preparation of technical reports</li> <li>• Dissemination of technical reports to local appliance/equipment manufacturers</li> <li>• Conduct of survey of manufacturers</li> </ul>	<p>manufacturers that apply recommended techniques in the technical reports</p> <ul style="list-style-type: none"> <li>• Percent of manufacturers that benefited financially from the application of recommended techniques</li> </ul>	<p>and CFLs</p> <ul style="list-style-type: none"> <li>• No regionally focused product-specific technical reports prepared to document benefit-cost of efficiency improvements for the target products</li> </ul>	<p>3</p> <ul style="list-style-type: none"> <li>• 20% of manufacturers by Year 4</li> <li>• 10% of manufacturers by Year 4</li> </ul>				
<p><b>Activity 3.2: Educational workshops for manufacturers on impacts of standards on manufacturers and ways to work with standards to increase profitability.</b></p> <p><b>Supporting Activities</b></p> <ul style="list-style-type: none"> <li>• Conduct of workshops for manufacturers</li> <li>• Conduct of post workshop evaluations (<i>after at least 1 year</i>)</li> </ul>	<ul style="list-style-type: none"> <li>• Number of trainees</li> <li>• Percent of trainees applying concepts learned in workshops</li> <li>• Percent of trainees whose companies are actually profiting and benefiting from ES&amp;L</li> </ul>	<ul style="list-style-type: none"> <li>• Manufacturers and suppliers participate in occasional half-day or full-day workshops to learn about government ES&amp;L policies or programs</li> <li>• No sustained technical training or outreach to manufacturers on ES&amp;L</li> </ul>	<ul style="list-style-type: none"> <li>• At least 100 trainees, including at least 15 per country by Year 2</li> <li>• At least 50% by Year 4</li> <li>• At least 30% by Year 5</li> </ul>	<ul style="list-style-type: none"> <li>• Documentation of workshop evaluation</li> <li>• Documentation of post-workshop evaluation results (<i>after at least 1 year</i>)</li> </ul>	<ul style="list-style-type: none"> <li>• Other factors that also affect manufacturer attitudes align so that BRESL's limited efforts produce an attitude shift</li> <li>• Local ES&amp;L will reinforce workshop concepts in on-going contacts</li> </ul>		
<p><b>Activity 3.3: Limited technical assistance that addresses technical and marketing/financial barriers to increasing EE in the manufacturing of equipment and appliances for local manufacturers on techniques for increasing efficiency of their</b></p>	<ul style="list-style-type: none"> <li>• Total number of local manufacturers adopting technical assistance recommendations by Year 5</li> <li>• Percent of local manufacturers satisfied with TA</li> </ul>	<ul style="list-style-type: none"> <li>• Local manufacturers do not receive technical assistance on steps to upgrade manufacturing and on benefits for profitability</li> </ul>	<ul style="list-style-type: none"> <li>• At least 5 manufacturers adopt some of the technical assistance recommendations</li> <li>• Manufacturers give average rating for TA provided of at least 4 on a 1-5 scale by Year 5</li> <li>• 50% of manufacturers</li> </ul>	<ul style="list-style-type: none"> <li>• Survey of local manufacturers</li> <li>• Documentation of the TA provided</li> <li>• Manufacturer reports</li> <li>• Documentation of results of Bangladesh TA program for local FIs/Banks</li> </ul>	<ul style="list-style-type: none"> <li>• Useful TA can be provided within a limited budget</li> <li>• Local manufacturers that receive TA share experiences with and knowledge from TA with other manufacturers</li> </ul>		

Project Strategy	Objectively Verifiable Indicators			Critical Assumptions
	Indicator	Baseline	Target	Means of Gauging Success
<p><b>products.</b></p> <p><b>Supporting Activities</b></p> <ul style="list-style-type: none"> <li>Assessment of local manufacturers capacity to produce EE</li> <li>Assessment of potential improvements in the manufacturing capacity of local manufacturers to produce EE appliance/equipment</li> <li>TA to selected local appliance/equipment manufacturers to improve their manufacturing and product efficiency</li> <li>An outreach and TA program for financial institutions in Bangladesh to encourage them to finance manufacturing plant upgrades to produce more efficient products.</li> </ul>	<p>provided</p> <ul style="list-style-type: none"> <li>Percent of local manufacturers that benefited financially from the application of the TA provided</li> <li>Volume of EE products manufactured and sold by local manufacturers that received TA</li> <li>Number of financial institutions in Bangladesh that are financing EE product manufacturing projects of equipment/appliance manufacturers</li> <li>Number of BRESL countries replicating good lessons learned from Bangladesh TA program for financing institutions</li> </ul>	<ul style="list-style-type: none"> <li>Local banks do not promote or encourage investment in upgrades to produce EE equipment</li> </ul>	<p>receiving TA by Year 5</p> <ul style="list-style-type: none"> <li>At least 5 new EE products manufactured and sold by local manufacturers that received TA by Year 5</li> <li>3 local financing institutions/banks in Bangladesh providing financing for EE products manufacturing projects</li> <li>1 other BRESL country carrying out TA program for financing institutions to finance EE product manufacturing projects.</li> </ul>	<ul style="list-style-type: none"> <li>Documentation of bank loan transactions for EE products manufacturing in Bangladesh and in other BRESL countries</li> </ul>
<p><b>Component 4: ES&amp;L Regional Cooperation Program. Regional cooperation and information sharing on-going and helps to maximize impacts</b></p>	<ul style="list-style-type: none"> <li>Number of national web sites operating and updated annually</li> <li>Lessons learned reports</li> <li>Work group activities contributing to regional ES&amp;L harmonization</li> </ul>	<ul style="list-style-type: none"> <li>APEC ESIS web site operating and displays current ES&amp;L programs</li> <li>CLASP Manual</li> <li>No regional work group on ES&amp;L</li> </ul>	<ul style="list-style-type: none"> <li>All BRESL countries have ES&amp;L websites operating by Year 2 and updated at least annually</li> <li>Report completed &amp; posted by Yr 2 on at least 4 issues</li> <li>At least countries use harmonized standards</li> </ul>	<ul style="list-style-type: none"> <li>Web sites</li> <li>PMU reports</li> <li>Lessons Learned reports</li> <li>Work group minutes</li> <li>Documentation of MRAs</li> <li>Documentation of Follow-up plan</li> </ul>
				<ul style="list-style-type: none"> <li>Interest in regional coordination continues</li> <li>Governments provide support to work group activities</li> </ul>

Project Strategy		Objectively Verifiable Indicators			Means of Gauging Success	Critical Assumptions
Indicator	Baseline	Target				
	<ul style="list-style-type: none"> <li>Regional Follow-up Action Plan</li> </ul>	<ul style="list-style-type: none"> <li>Follow-up action plan (Yr 4)</li> </ul>				
<p><b>Activity 4.1: Project web site with regional information developed and maintained; provides umbrella for websites referenced in other components.</b></p> <p><b>Supporting Activities:</b></p> <ul style="list-style-type: none"> <li>Prepare and activate web site including extensive links to available national information and to APEC ESIS</li> <li>Participating countries post additional national information on the web</li> </ul>	<ul style="list-style-type: none"> <li>Operational project website</li> <li>Number of national web sites operating and updated annually</li> </ul>	<ul style="list-style-type: none"> <li>Operating by end of Year 1</li> <li>All participating countries have ES&amp;L websites operating by Year 2 and updated at least annually</li> </ul>	<ul style="list-style-type: none"> <li>APEC ESIS web site operating and displays current ES&amp;L programs</li> <li>Little advance public notice (and regional awareness) of planned MEPS and labeling and revisions to current MEPS and labeling</li> </ul>	<ul style="list-style-type: none"> <li>Web sites</li> <li>PMU reports</li> </ul>	<ul style="list-style-type: none"> <li>Participating countries willing to make information publicly available</li> </ul>	
<p><b>Activity 4.2: Lessons learned are assessed, documented and disseminated.</b></p> <p><b>Supporting Activities:</b></p> <ul style="list-style-type: none"> <li>Prepare and post lessons learned reports on key issues identified by participating countries and not adequately covered in existing materials</li> </ul>	<ul style="list-style-type: none"> <li>Lessons learned reports</li> </ul>	<ul style="list-style-type: none"> <li>Report completed and posted by end of year two on at least 4 issues</li> </ul>	<ul style="list-style-type: none"> <li>CLASP manual</li> </ul>	<ul style="list-style-type: none"> <li>Lessons Learned reports</li> </ul>	<ul style="list-style-type: none"> <li>Participating countries are willing to contribute to documentation of lessons learned</li> <li>Stakeholders in region access the web site and lessons learned materials</li> <li>Governments provide support to work group activities</li> </ul>	
<p><b>Activity 4.3: Regional work group on labeling and standards (cutting across products)</b></p>	<ul style="list-style-type: none"> <li>Participation in workgroup</li> <li>ES&amp;L Information generated and provided by work group that are useful to participating countries</li> <li>Work group activities</li> </ul>	<ul style="list-style-type: none"> <li>80% of BRESL countries participate in workgroup annually starting Year 1, Starting Year 2, at least 80% of participants each year are satisfied with information provided by work group</li> </ul>	<ul style="list-style-type: none"> <li>No regional work group on ES&amp;L</li> <li>Some information generated on ES&amp;L activities posted on APEC, but limited dissemination to</li> </ul>	<ul style="list-style-type: none"> <li>Work group minutes</li> <li>Documentation of information/reports generated and services provided by work group</li> <li>Survey of recipients of work group ES&amp;L</li> </ul>		

Project Strategy		Objectively Verifiable Indicators			Means of Gauging Success		Critical Assumptions
Indicator		Baseline	Target	Success		Assumptions	
<p>contributing to regional ES&amp;L harmonization</p>	<p>policy makers working on ES&amp;L in BRESL countries</p>	<p>At least 4 participating countries use harmonized standards or procedures developed under project</p>	<p>products and services</p> <ul style="list-style-type: none"> <li>Documentation of harmonization agreements and MRAs</li> </ul>	<p>PMU annual reports</p> <ul style="list-style-type: none"> <li>Documentation of the approved follow-up action plan</li> </ul>	<p>Participating countries remain interested in and committed to follow-up activities.</p>		
<p><b>Activity 4.4: Preparation of a plan for regional activities and coordination after the GEF-funded project ends.</b>  <b>Supporting Activities:</b></p> <ul style="list-style-type: none"> <li>Development of follow-up sustainable action plan</li> </ul>	<p>Regional Action Plan approved by BRESL countries for post-GEF activities to continue progress and regional coordination</p>	<p>APEC ESIS exists as useful information platform, but no long-term plan for coordination of ES&amp;L activities in the region</p>	<p>Completed action plan approved by mid-Year 5; and implementation begins by project end</p>	<p>Official documents on government procurement policies</p> <ul style="list-style-type: none"> <li>Websites</li> <li>Annual PMU Reports</li> <li>Report on pilot schemes</li> </ul>	<p>Governments will adopt and implement successful schemes</p> <ul style="list-style-type: none"> <li>Other countries can find the funds to replicate successful schemes</li> <li>Consumers interested in web-based information</li> </ul>		
<p><b>COMPONENT 5: ES&amp;L Pilot projects – Demonstration of various aspects of the development and implementation of ES&amp;L programs</b></p>	<p>Number of countries implementing government procurement schemes for EE products</p> <ul style="list-style-type: none"> <li>Number of countries with EE products databases</li> <li>Number of countries with EE consumer education schemes</li> </ul>	<p>China and Korea implementing government procurement policies</p> <ul style="list-style-type: none"> <li>On-line databases of efficient equipment only available in Korea</li> <li>Limited consumer education and promotion schemes</li> </ul>	<p>2 countries by Year 3</p> <ul style="list-style-type: none"> <li>2 additional countries by Year 3</li> <li>Successful and acceptable results in at least 3 countries by Year 3, at least two more countries replicate successful schemes</li> </ul>	<p>Official documents on government procurement policies</p> <ul style="list-style-type: none"> <li>Final evaluation reports on government procurement pilots</li> </ul>	<p>Once policies developed, governments will adopt and implement them</p> <ul style="list-style-type: none"> <li>Other countries can find the funds to replicate successful</li> </ul>		
<p><b>Activity 5.1: Government procurement</b></p> <ul style="list-style-type: none"> <li>Development and implementation of government procurement schemes in Thailand, Vietnam and Bangladesh</li> </ul>	<p>Number of countries implementing government procurement schemes for efficient products</p> <ul style="list-style-type: none"> <li>Percentage of covered equipment that is efficient</li> </ul>	<p>China and Korea implementing government procurement policies</p> <ul style="list-style-type: none"> <li>Thailand implementing for air conditioners</li> </ul>	<p>In addition to China and Korea, two countries implement government procurement programs by Year 3</p> <ul style="list-style-type: none"> <li>At least 75% of covered equipment is efficient by Year 5</li> </ul>	<p>Official documents on government procurement policies</p> <ul style="list-style-type: none"> <li>Final evaluation reports on government procurement pilots</li> </ul>	<p>Once policies developed, governments will adopt and implement them</p> <ul style="list-style-type: none"> <li>Other countries can find the funds to replicate successful</li> </ul>		

Project Strategy		Objectively Verifiable Indicators			Means of Gauging Success		Critical Assumptions
		Indicator	Baseline	Target			
		<ul style="list-style-type: none"> <li>Number of BRESL countries replicating successful schemes</li> <li>Number of countries with databases developed and on-line</li> <li>Number of database users</li> <li>Percentage of users rating database "useful" or "very useful"</li> </ul>	only	<ul style="list-style-type: none"> <li>At least one other BRESL country adopts similar policy by Year 5</li> <li>Two additional countries have databases operating and populated by Year 3</li> <li>Databases have at least 1 million "hits" per month in China and at least 100,000 hits per month in Bangladesh by Year 5</li> <li>At least 75% of users surveyed rate databases useful or very useful</li> </ul>	<ul style="list-style-type: none"> <li>Web sites</li> <li>Web site use statistics</li> <li>Email survey of a sample of website users</li> </ul>	<ul style="list-style-type: none"> <li>Consumers interested in web-based information</li> </ul>	
<b>Activity 5.2: On-line databases of efficient equipment</b> <ul style="list-style-type: none"> <li>Development and implementation of an on-line database of efficient equipment and promotion to consumers in China and Bangladesh</li> </ul>							
<b>Activity 5.3: Consumer education</b> <ul style="list-style-type: none"> <li>Development and implementation of consumer education schemes for EE products in Bangladesh and Indonesia</li> </ul>	<ul style="list-style-type: none"> <li>Number of countries demonstrating EE consumer education schemes</li> <li>Number of countries replicating successful EE promotion/market development schemes</li> </ul>	<ul style="list-style-type: none"> <li>Limited consumer education and promotion schemes; usually one-off schemes for particular project, and then discontinued</li> </ul>	<ul style="list-style-type: none"> <li>Successful and acceptable results in at least 3 countries by Year 3</li> <li>At least two more countries replicate successful schemes by Year 5</li> </ul>	<ul style="list-style-type: none"> <li>Final reports on pilot schemes</li> <li>Annual country reports to PMU</li> </ul>	<ul style="list-style-type: none"> <li>Other countries can find the funds to replicate successful schemes</li> </ul>		



**SECTION III: Total Budget and Work Plan**

<b>Award ID:</b>	00048483
<b>Award Title:</b>	PIMS 3327 Regional: Barrier Removal to the Cost-Effective Development and Implementation of Energy Efficiency Standards and Labeling Project (BRESL)
<b>Business Unit:</b>	CHN10
<b>Project ID:</b>	00058669
<b>Project Title:</b>	PIMS 3327 Regional: Barrier Removal to the Cost-Effective Development and Implementation of Energy Efficiency Standards and Labeling Project (BRESL)
<b>Implementing Partner (Executing Agency)</b>	National Development and Reform Commission (NDRC)

**Table 15: BRESL Project Budget**

GEF Outcome / Atlas Activity	Responsible Party / Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	Atlas Budget Description	Amount Year 1 (USD)	Amount Year 1 (USD)	Amount Year 1 (USD)	Amount Year 1 (USD)	Total (USD)
<b>Outcome 1: ES&amp;L Policy Making Program</b>										
Activity 1.1: Strengthening of the Policy Context for Energy Standards and Labels	National Implementing Agencies	62000	GEF	71200	International experts	68,000	68,000	0	0	136,000
				71300	National experts	82,500	75,500	7,000	0	165,000
				71400	Administrative assistant	10,000	10,000	0	0	20,000
				71600	International travel	29,500	13,300	1,800	0	44,600
				74500	Miscellaneous: Study tour for policy-makers	35,000	0	0	0	35,000
				74500	Miscellaneous: Meetings and workshops	41,000	35,000	6,000	0	82,000
				71200	International experts	32,500	52,500	70,000	15,000	185,000
				71300	National experts	90,500	190,200	211,000	52,000	592,100
				71400	Administrative assistant	2,160	4,240	4,860	1,120	13,500
				71600	International travel	17,000	33,500	7,700	1,500	61,200
				74500	Miscellaneous: Pilot testings	0	25,000	25,000	0	50,000
				74500	Miscellaneous: Meetings and workshops	48,000	86,000	89,000	3,500	227,000
<b>Sub-Total Outcome 1</b>										<b>1,611,400</b>
<b>Outcome 2: ES&amp;L Capacity Building Program</b>										
Activity 2.1: Training to Strengthen and Enable Public Institutions to Support Development and Implementation of ES&L Programs	Regional PMU	62000	GEF	71200	International experts	21,000	0	0	0	21,000
				71200	Regional experts	9,000	0	5,100	0	14,100
				71600	International travel	3,600	0	0	0	3,600
				71600	In-region travel	5,200	0	0	0	5,200
				74500	Miscellaneous: Meetings and workshops	45,000	0	0	0	45,000
				71300	National experts	29,500	0	0	0	29,500
				74500	Miscellaneous: Study tour for policy-makers	0	25,000	0	0	25,000

GEF Outcome / Atlas Activity	Responsible Party / Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	Atlas Budget Description	Amount (USD)							Total (USD)				
						Amount Year 1 (USD)	Amount Year 1 (USD)	Amount Year 1 (USD)	Amount Year 1 (USD)	Amount Year 1 (USD)	Amount Year 1 (USD)	Amount Year 1 (USD)					
Activity 2.2: Capacity Enhancement in the Development and Implementation of Standards and Labeling for the 6 Targeted Products	Agencies Regional PMU National Implementing Agencies	62000	GEF	71600	In-region travel	185,800	0	0	0	0	0	0	185,800				
					International experts	63,000	126,000	37,800	12,600	12,600	12,600	252,000					
					Regional experts	22,500	45,000	41,500	32,500	32,500	32,500	174,000					
					International travel	12,960	12,960	12,960	12,960	12,960	12,960	64,800					
					In-region travel	9,360	9,360	9,360	9,360	9,360	9,360	46,800					
					Miscellaneous: Meetings and workshops	20,400	20,400	20,400	20,400	20,400	20,400	102,000					
					In-region travel	64,740	64,740	64,740	64,740	64,740	64,740	323,700					
					National experts	0	0	8,000	8,000	8,000	7,900	23,900					
					International experts	21,000	21,000	0	0	0	0	42,000					
					Regional experts	9,000	9,000	0	0	0	0	18,000					
					International travel	5,400	5,400	0	0	0	0	10,800					
					In-region travel	3,600	3,600	0	0	0	0	7,200					
Activity 2.3: Strengthening of National and Regional Testing and Certification Infrastructure	Agencies Regional PMU National Implementing Agencies	62000	GEF	74500	Miscellaneous: Round-robin testing	0	0	225,000	0	0	0	225,000					
					International experts	56,000	59,500	3,500	3,500	3,500	0	122,500					
					National experts	53,200	57,700	9,000	4,500	4,500	0	124,400					
					Administrative assistant	2,500	2,500	0	0	0	0	5,000					
					International travel	15,400	17,200	0	0	0	0	32,600					
					In-region travel	27,900	30,500	5,200	2,600	2,600	0	66,200					
					Miscellaneous: Workshops (mkt monitoring)	0	9,000	0	9,000	0	0	18,000					
					Miscellaneous: Test products (mkt monitoring)	0	0	33,350	16,700	16,700	0	50,050					
					International experts (model proceed)	3,500	7,000	2,100	700	700	0	14,000					
					International travel	0	1,800	1,800	0	0	0	3,600					
					Regional experts (model proceed)	3,000	6,000	1,800	600	600	0	12,000					
					National Experts (E-E-M-F-R Reporting)	0	15,000	0	0	0	0	15,000					
Activity 2.4: Strengthening of Data Collection and Reporting Procedures on Equipment Availability and Sales by Efficiency Level in Participating Countries	Agencies Regional PMU National Implementing Agencies	62000	GEF	71600	In-region travel	1,950	3,900	1,170	360	360	390	7,770					
					Contractual Svcs-Cos-Market Surveys	0	60,000	0	0	0	60,000	120,000					
					Miscellaneous: Regional meetings	5,000	5,000	5,000	5,000	5,000	5,000	25,000					
					International experts (TA)	6,100	7,500	7,500	4,860	4,860	4,020	29,980					
					National experts (TA)	37,790	43,790	43,290	39,040	39,040	33,790	197,700					
					Administrative assistant	800	700	700	500	500	500	3,200					
					In-region travel	7,800	15,600	15,600	7,800	7,800	0	46,800					
					International travel	0	0	0	10,300	10,300	0	20,600					
					Miscellaneous: Meetings and workshops	0	18,000	18,000	18,000	18,000	0	54,000					
					<b>Sub-total Outcome 2</b>												<b>2,607,500</b>

GEF Outcome / Atlas Activity	Responsible Party / Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	Atlas Budget Description	Amount Year 1 (USD)	Amount Year 1 (USD)	Amount Year 1 (USD)	Amount Year 1 (USD)	Total (USD)	
<b>Outcome 3: ES&amp;L Manufacturer Support Program</b>											
Activity 3.1: Product Technical Analysis and Reports	Regional PMU	62000	GEF	71200	International experts	70,000	0	0	0	140,000	
				71200	Regional experts	30,000	0	0	0	60,000	
				71600	In-region travel	16,280	0	0	0	32,530	
				71600	International travel	9,000	0	0	0	18,000	
	Activity 3.2: Educational Workshops for Manufacturers/Retailers on Impacts of Standards and Ways to Work with Standards to Increase Profitability	Regional PMU	62000	GEF	71200	International experts	0	10,500	0	0	10,500
					71200	Regional experts	0	5,000	0	0	5,000
		National Implementing Agencies	62000	GEF	71600	International travel	0	2,500	0	0	2,500
					71600	In-region travel	0	2,500	0	0	2,500
					71200	International experts	0	12,600	10,000	0	22,600
					71300	National experts	0	20,350	0	0	20,350
Activity 3.3: Technical Assistance to Manufacturers	National Implementing Agencies	62000	GEF	71600	International travel	0	5,400	0	0	5,400	
				71600	In-region travel	0	23,500	0	0	23,500	
				74500	Miscellaneous: Meetings and workshops	0	120,000	0	0	120,000	
				71200	International experts	0	23,800	23,000	0	46,800	
				71300	National experts	0	31,150	41,475	0	72,625	
				71400	Administrative Assistant	0	650	800	0	1,450	
				71600	International travel	0	4,700	12,350	4,700	21,750	
				71600	In-region travel	0	3,600	12,620	11,300	27,520	
				74500	Misc: VA Implementation (Indonesia)	0	15,000	30,000	50,000	95,000	
				<b>Sub-Total Outcome 3</b>							
<b>Outcome 4: ES&amp;L Regional Cooperation Program</b>											
Activity 4.1: Development of Project web site	Regional PMU	62000	GEF	71300	National experts	13,500	11,250	9,000	6,750	45,000	
				74500	Miscellaneous: Website host	5,000	5,000	5,000	5,000	25,000	
Activity 4.2: Lessons Learned Report	Regional PMU	62000	GEF	71200	International experts	21,000	21,000	0	0	42,000	
				71200	Regional experts	9,000	9,000	0	0	18,000	
				71600	International travel	1,800	1,800	0	0	3,600	
				71600	In-region travel	2,600	2,600	0	0	5,200	
Activity 4.3: Regional Energy Efficiency Standards and Labeling Network	Regional PMU	62000	GEF	71300	National experts	2,250	2,250	2,250	2,250	11,250	
				71600	In-region travel	1,950	1,950	1,950	1,950	9,750	
				74500	Miscellaneous: Meetings and workshops	4,500	4,500	4,500	4,500	22,500	
				71300	National experts	9,870	9,870	9,870	9,870	49,350	
				71600	In-region travel	11,750	11,750	11,750	11,750	58,750	
74500	Miscellaneous: Info Sharing Network	20,000	10,000	10,000	10,000	60,000					

GEF Outcome / Atlas Activity	Responsible Party / Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account		Atlas Budget Description							Amount Year 1 (USD)	Amount Year 1 (USD)	Amount Year 1 (USD)	Total (USD)
				Code	Code	Amount Year 1 (USD)	Amount Year 1 (USD)	Amount Year 1 (USD)	Amount Year 1 (USD)	Amount Year 1 (USD)	Amount Year 1 (USD)	Amount Year 1 (USD)				
Activity 4.4: Regional ES&L Harmonization Initiatives	Regional PMU	62000	GEF		(Indonesia)											
					71200	International experts	0	25,000	20,000	10,000	10,000	10,000	10,000	65,000		
					71200	Regional experts	0	15,000	15,000	10,000	10,000	10,000	10,000	50,000		
					<del>71300</del>	<del>National experts</del>	<del>0</del>	<del>10,000</del>	<del>10,000</del>	<del>10,000</del>	<del>10,000</del>	<del>10,000</del>	<del>10,000</del>	<del>30,000</del>		
					71600	International travel	0	5,000	5,000	2,500	2,500	2,500	2,500	15,000		
					71600	In-region travel	0	2,500	2,500	2,500	2,500	2,500	2,500	10,000		
					74500	Miscellaneous: Meetings and workshops	0	2,500	2,500	30,000	30,000	30,000	30,000	65,000		
					71200	International experts	0	0	0	21,000	21,000	7,000	7,000	28,000		
					71300	National experts	0	0	0	9,000	9,000	3,000	3,000	12,000		
					71600	International travel	0	0	0	3,600	3,600	1,800	1,800	5,400		
Activity 4.5: Preparation of a Plan for Regional Activities and Coordination after the GEF-Funded Project Ends	Regional PMU	62000	GEF		In-region travel	0	0	0	5,200	5,200	5,200	5,200	10,400			
					Miscellaneous: Meetings and workshops	0	0	0	3,000	3,000	3,000	3,000	6,000			
					Miscellaneous: Seed money for follow-up activities	0	0	0	0	0	25,000	25,000	25,000			
					74500	National experts	0	0	0	15,375	15,375	5,125	5,125	20,500		
Sub-Total Outcome 4	National Implementing Agencies	62000	GEF		National experts	0	0	0	9,100	9,100	9,100	9,100	18,200			
					In-region travel	0	0	0	0	0	0	0	0			
<b>Outcome 5: ES&amp;L Pilot Projects</b>																
Activity 5.1: Government Procurement	BSTI, DGEEU, DEDE, MOI	62000	GEF		International experts	0	8,750	21,100	21,100	8,150	59,100					
					National experts	0	15,500	28,850	28,850	16,500	89,700					
					Administrative Assistant	0	500	2,000	2,000	500	5,000					
					International Travel	0	0	7,700	5,900	0	13,600					
					Miscellaneous: Meetings and workshops	0	7,500	12,000	15,000	6,000	40,500					
					Purchaser education materials	0	0	0	30,000	4,000	34,000					
					Miscellaneous: Study tour for Policy-Makers	0	0	50,000	0	0	50,000					
					International experts	0	10,350	1,400	1,400	360	13,500					
					National experts	0	10,000	19,750	19,750	10,000	59,500					
					Administrative Assistant	0	500	2,000	2,000	850	5,350					
Activity 5.2: Database (and Web Site) of Energy-Efficient Equipment	BSTI, NDRC	62000	GEF		International travel	0	2,900	0	0	0	2,900					
					Miscellaneous: Website host	0	10,000	10,000	10,000	10,000	40,000					
					International experts	0	2,050	7,200	7,200	2,050	18,500					
					National professional	0	13,800	32,550	31,450	13,800	91,600					
Activity 5.3: Development of Consumer Education Schemes	BSTI, DGEEU, MOE	62000	GEF		Administrative Assistant	0	1,000	4,000	4,000	1,680	10,680					
					International travel	0	3,600	5,000	5,000	0	13,600					

GEF Outcome / Atlas Activity	Responsible Party / Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	Atlas Budget Description	Amount (USD)					Total (USD)
						Year 1 (USD)	Year 1 (USD)	Year 1 (USD)	Year 1 (USD)	Year 1 (USD)	
				74100	Consumers IEC materials (dev't & print)	0	0	37,000	0	0	37,000
			GEF	74500	Miscellaneous: Press Conferences/Public Announcements	0	0	80,000	15,000	0	95,000
				74500	Miscellaneous: Meetings and workshops	0	4,000	16,000	16,000	7,770	43,770
				71200	International experts	0	0	10,000	10,000	0	20,000
Activity 5.4: ES&L Initiatives Financing	DGEUU	62000	GEF	71300	National experts	0	0	10,000	10,000	3,500	23,500
				71600	International travel	0	0	2,000	2,000	0	4,000
				74500	Miscellaneous: Meetings and workshops	0	0	2,500	5,000	5,000	12,500
				71200	International experts	10,000	20,000	20,000	20,000	20,000	90,000
				71300	National experts	0	30,000	30,000	30,000	30,000	120,000
Activity 5.5: Regional Harmonization Promotion	NDRC, in cooperation with National Implementing Agencies	62000	GEF	71600	Regional travel	1,500	7,500	7,500	7,500	7,500	31,500
				74500	Miscellaneous: Harmonization Pilots & Workshops	0	50,000	50,000	50,000	50,000	200,000
				74100	Subscriptions (Journals & Databases)	0	2,500	2,500	2,500	2,500	10,000
				74100	Documentation (development & print)	0	25,000	20,000	10,000	9,000	64,000
<b>Sub-Total Outcome 5</b>											<b>1,298,800</b>
<b>Project Management</b>											
Annual Audits				74100	Annual Financial Audits	5,000	5,000	5,000	5,000	5,000	25,000
Mid-Term Review			GEF	71200	International consultants	0	0	25,000	0	0	25,000
Final Evaluation	Regional PMU	62000		71200	International consultants	0	0	0	0	25,000	25,000
				71200	Chief technical advisor (international)	54,000	54,000	54,000	54,000	54,000	270,000
				71300	PMU director	22,200	22,200	22,200	22,200	22,200	111,000
				71300	Project officers	13,000	13,000	13,000	13,000	13,000	65,000
				71400	Finance/Administrative assistant	5,000	5,000	5,000	5,000	5,000	25,000
			GEF	71600	In-region travel (PMU staff)	7,500	7,500	7,500	7,500	7,500	37,500
Project Implementation	Regional PMU	62000		72200	Office equipment	5,000	1,000	1,000	1,000	1,000	9,000
				73100	Office expenses (telecom, stationeries)	12,000	12,000	12,000	12,000	12,000	60,000
				74500	Miscellaneous: Inception meeting	50,000	0	0	0	0	50,000
				72100	Contract management fees	22,500	22,500	22,500	5,000	5,000	77,500
<b>Sub-Total (Project Management)</b>						<b>1,644,360</b>	<b>2,251,510</b>	<b>1,893,045</b>	<b>1,147,610</b>	<b>863,475</b>	<b>7,809,000</b>
<b>Grand Total (All Components + Project Management)</b>											<b>7,809,000</b>

**SECTION IV: ADDITIONAL INFORMATION**

**PART I: Other Agreements (See attached)**

- A. GEF Operational Focal Point Letter of Endorsements
- B. Co-Financing Letters

Attached separately

## PART II: Stakeholder Involvement Plan

During the conduct of PDF-A exercise for BRESL, several stakeholders in each participating country were consulted through a survey, and round table discussions. A regional stakeholders' consultation workshop was also conducted. The following are the national and regional stakeholders of BRESL and their expected role in the project:

**Table 16: Role of Stakeholders**

<b>Institution</b>	<b>Mandate on ES&amp;L and Role in BRESL</b>
<b>Bangladesh</b>	
Bangladesh Standards & Testing Institute (BSTI)	Lead agency for development of MEPS and also for establishing processes and institutions for energy performance testing.
Center for Energy Studies, Bangladesh University of Engineering & Technology (CES-BUET)	Responsible for analysis and implementation in end-use energy efficiency, including cooperation on ES&L in Bangladesh.
<b>China</b>	
National Development and Reform Commission (NDRC)	Lead agency overseeing energy policy and regulatory and legal framework for ES&L in China.
Standards Administration of China (SAC)	Oversight of minimum energy performance standards (MEPS), mandatory labeling, and endorsement labeling in China.
China National Institute for Standardization (CNIS)	Implementing agency for MEPS and mandatory labeling in China. Under SAC.
China Standards Certification Centre (CSC)	Implementing agency for voluntary endorsement labeling in China. Under SAC.
<b>Indonesia</b>	
Directorate General for Electricity and Energy Utilization (DGEEU)	Lead agency for developing and implementing energy efficiency and ES&L in Indonesia.
<b>Korea (Republic of)</b>	
Ministry of Commerce, Industry and Environment (MOCIE)	Oversight of all energy efficiency policy and implementation in Korea, including the legal and regulatory framework for ES&L.
Korea Testing Laboratory (KTL)	Lead agency for testing of energy performance for ES&L programs.
<b>Pakistan</b>	
National Energy Conservation Centre (ENERCON)	Lead agency for the programming and implementation of the Government of Pakistan's energy conservation and energy efficiency efforts.
<b>Thailand</b>	
Department of Alternative Energy and Energy Efficiency (DEDE)	Lead implementing agency on energy efficiency and ES&L. DEDE has authority to develop MEPS and to designate endorsement levels for high-efficiency products.
Electricity Generation Authority of Thailand (EGAT)	Key implementing agency for Thailand's successful voluntary comparative energy labeling programs.
Thailand Industrial Standards Institute (TISI)	Lead agency for developing and implementing mandatory standards for product safety and quality. Also responsible for enacting MEPS as Thailand national standards.

<b>Institution</b>	<b>Mandate on ES&amp;L and Role in BRESL</b>
Electrical and Electronics Institute (EEI)	Quasi-government laboratory responsible for energy performance testing on behalf of EGAT and government ES&L programs.
<b>Vietnam</b>	
Ministry of Industry (MOI)	Lead agency for developing energy labeling criteria, regulations for MEPS, and working with MOST to ensure that these are developed as national standards and implemented.
Ministry of Standards (MOST)	Lead agency for developing and implementing mandatory standards for product safety and quality. Also responsible for enacting MEPS as Thailand national standards.
Electricity of Vietnam	Implementing voluntary programs on end-use efficiency, including certification of high-efficiency equipment. Supports ES&L activities in cooperation with MOI.
<b>OTHERS</b>	
UNDP China	GEF Implementing Agency. Overall oversight on behalf of GEF of the BRESL project (regional and national)
UNDP Country Offices	Oversee BRESL project execution in participating countries
International Copper Association (ICA)	Industry-funded association that is quite active in China, Southeast Asia, and South Asia, promoting development of a strengthened ES&L framework as well as MEPS and labeling schemes for products covered under BRESL, such as air conditioners, fluorescent lamp ballasts, and air conditioners.
ELI Quality Certification Institute	Manages international certification and labeling program for high-quality compact fluorescent lamps (CFLs). Can be key strategic partner with BRESL program. Institute is under management of China Standardization Center.
International CFL Harmonization Institute	International initiative supported by a number of governments, major manufacturers, trade associations, and NGOs. Working to develop a single harmonized international test procedure for CFLs, as well as a set of common performance levels that could be adopted internationally in order to harmonization and rationalize the way that CFLs are regulated and promoted by individual countries. The Initiative works in close cooperation with the ELI program.
Australian Greenhouse Office	This office is part of the Department of the Environment and Water Resources, and is responsible for the delivery of the majority of programmes under the Australian Government's climate change strategy. It will support BRESL in the regional harmonization activities, along with its current work with APEC.
CLASP	The Collaborative Labeling and Appliance Standard Program (CLASP) is a U.S.-based non-profit organization that works internationally to promote the development and implementation of ES&L programs. CLASP was active in the initial development of the BRESL concept paper.



### **PART III: CO<sub>2</sub> Emissions Reduction Estimates**

#### **Summary**

The BRESL Project is an OP-5 project intended to remove barriers to the cost-effective development and implementation of energy efficiency standards & labeling programs. The anticipated energy savings from the use of energy efficient products (appliances/equipment) that will be facilitated and influenced by the interventions that will be carried out in the project's 7 participating countries (including Republic of Korea) will bring about CO<sub>2</sub> emission reductions from the reduced utilization of fossil fuels used in thermal power generation units that produce the electricity utilized in these energy using products. BRESL is comprehensive OP-5 project covering 6 large end-use products. The implementation of ES&L initiatives catalyzed by the BRESL project will lead to about 24.8 million tons of CO<sub>2</sub> by end of project, and a cumulative CO<sub>2</sub> reduction of 37.3 million tons. The long-term CO<sub>2</sub> emissions reductions will be much greater and cumulative reductions are expected to reach about 1,195 million and 3,867 million tons of CO<sub>2</sub> in 2021 and 2031, respectively.

These CO<sub>2</sub> emissions reductions will be dispersed across the participating countries and will likely lead to substantial indirect emissions reductions as well. The product that will yield the largest CO<sub>2</sub> emissions reductions is air conditioner.

#### **Expected CO<sub>2</sub> Emissions Reductions**

The BRESL project includes the implementation of ES&L programs for six product types across the seven participating countries. Not all countries will participate in activities designed for all of the products, but most countries will participate in activities for most of the products (see Section II for details).

#### **Assumptions**

The CO<sub>2</sub> emission factors that were used in estimating the CO<sub>2</sub> emission reductions in each BRESL country are as follows:

<b>Country</b>	<b>CO<sub>2</sub> Emission Factor (ton CO<sub>2</sub>/MWh)</b>
Bangladesh	0.943
China	1.09
Indonesia	0.757
Korea, Republic	0.767
Pakistan	0.737
Thailand	0.674
Vietnam	0.430

Details of the assumptions used in the CO<sub>2</sub> emission reduction estimates for the Baseline and Alternative Scenarios are shown in Annex C. Among the important assumptions is that mandatory minimum energy performance standards will be adopted for those products in the BRESL countries.

The estimated CO<sub>2</sub> emissions reductions for this project are quite large at 24.8 MMT CO<sub>2</sub>/year and 37.3 cumulative MMT CO<sub>2</sub> in Year 5 (2011). The savings as % reduction of target year CO<sub>2</sub> emissions for the targeted products is about 2.7% for 2011 and about 8.8% in 2031. This means that the CO<sub>2</sub> emissions resulting from the power generation needed to supply power for all of the

new products sold from 2004 onward will be 8.8% lower in the year 2031 than they would have been otherwise.

The energy savings that will result from actions/activities that will be influenced and facilitated by the ES&L programs and the corresponding CO<sub>2</sub> emissions reductions that can be realized during and after BRESL project implementation are shown in Tables 17 and 18. It should be noted from these tables that: (1) Baseline and Alternative electricity consumptions are for products directly addressed in each country in the BRESL Project; (2) Alternative electricity savings are calculated as percent of electricity used by products participating in BRESL Project; and, (3) The difference between Baseline and Alternative electricity usages does not translate to savings, since savings also include savings from reduced purchases of incandescent lamps, and these are calculated at 2.75 times annual unit energy consumption of CFLs.

**Table 17: Expected Energy Savings During and After BRESL Implementation**

Year	Baseline electricity consumption (GWh/yr)	GEF electricity consumption (GWh/yr)	Project electricity savings (GWh/yr)	Percent electricity savings (%)	Cumulative Project electricity savings (GWh/yr)
2007	515,829	515,829	0	0.0%	0
2011	1,071,491	1,043,691	27,799	2.6%	40,473
2021	2,419,707	2,213,317	206,390	8.5%	1,299,295
2031	3,768,903	3,465,867	303,037	8.0%	4,224,907

**Table 18: Expected CO<sub>2</sub> Emissions Reductions During and After BRESL Implementation**

Year	Baseline CO <sub>2</sub> emissions (1) (MMT/yr)	Alternative CO <sub>2</sub> emissions (1) (MMT/yr)	GEF CO <sub>2</sub> reduction (2) (MMT/yr)	% CO <sub>2</sub> Reduction (2)	Cumul CO <sub>2</sub> Reduction (MMT)
2007	435.5	435.5	0.0	0.0%	0.0
2011	904.7	880.0	22.0	2.5%	37.3
2021	2,004.7	1,816.7	184.3	9.4%	1,194.8
2031	3,110.0	2,836.5	268.7	8.8%	3,866.7

Viewed by country, more than half of the energy savings and CO2 reductions from the BRESL project will come from China. The country with the next largest reductions is Korea, followed by Thailand and Indonesia.

**Table 19: Expected Energy and CO<sub>2</sub> Savings by Country**

Country	Energy Savings (GWh/Yr)			Cumulative Energy Savings (GWh)			CO <sub>2</sub> Emissions Reduction (MMT/Yr)			Cumulative CO <sub>2</sub> Emissions Reduction (MMT)		
	2011	2021	2031	2011	2021	2031	2011	2021	2031	2011	2021	2031
Bangladesh	385	2,928	4,472	619	19,463	63,291	0.4	2.8	4.2	0.6	18.4	59.7
China	12,610	105,064	147,363	19,974	667,711	2,144,111	13.8	115.0	161.2	21.9	730.6	2,346.1
Indonesia	1,260	9,755	15,392	2,009	63,908	210,318	1.0	7.4	11.7	1.5	48.4	159.2
Korea	5,150	47,343	73,478	7,930	281,226	974,328	3.9	36.3	56.3	6.1	215.7	747.2
Pakistan	3,778	5,122	6,466	2,785	36,078	79,274	2.8	3.8	4.8	2.8	36.1	79.3
Thailand	3,814	30,123	46,135	5,858	190,125	619,626	2.6	20.3	31.1	3.9	128.1	417.6
Vietnam	802	6,055	9,731	1,298	40,784	133,959	0.3	2.6	4.2	0.6	17.5	57.6
<b>Total</b>	<b>27,799</b>	<b>206,390</b>	<b>303,037</b>	<b>40,473</b>	<b>1,299,295</b>	<b>4,224,907</b>	<b>24.8</b>	<b>188.1</b>	<b>273.5</b>	<b>37.3</b>	<b>1,194.8</b>	<b>3,866.7</b>

Note: ES&L activities in the ROK are among the baseline activities of the project. In this regard, potential energy savings from ES&L initiatives in this country can be attributed to this project.

Viewed by product, the largest share of the energy savings and CO2 reductions will come from air conditioners, electric motors and electric fans. One of the reasons why the share of reductions from refrigerators is relatively low is that China, which has by far the largest share of electricity consumption of the BRESL countries, is already implementing its own MEPS and therefore the savings for refrigerators-related ES&L activities in China are counted as baseline and not additional.

**Table 20. Expected Energy and CO<sub>2</sub> Savings by Product**

Product	Energy Savings (GWh/yr)			CO <sub>2</sub> Emission Reduction (MMT/yr)		
	2011	2021	2031	2011	2021	2031
Refrigerators	794	5,052	9,731	0.6	3.6	6.9
Room air conditioners	6,390	68,090	92,290	6.6	71.2	96.2
Electric motors	6,776	60,638	90,702	5.0	44.9	66.9
Ballasts for FTLs)	844	6,991	11,220	0.6	5.2	8.3
Electric fans	7,969	34,242	46,180	7.1	32.2	43.4
Compact fluorescent lamps	2,567	13,198	27,134	2.3	12.3	25.3
Rice cookers	2,459	18,179	25,780	2.5	18.7	26.5
<b>Total</b>	<b>27,799</b>	<b>206,390</b>	<b>303,037</b>	<b>24.7</b>	<b>188.1</b>	<b>273.5</b>

Note: ES&L activities in the ROK are among the baseline activities of the project. In this regard, potential energy savings from ES&L initiatives in this country can be attributed to this project.

## Other Indirect CO<sub>2</sub> Reductions

There will be a significant amount of other indirect CO<sub>2</sub> emission reductions due to the BRESL project. The indirect impacts are attributed to the following:

- Since BRESL includes China, which is the world's largest manufacturer of electrical appliances and energy-using equipment, the higher efficiency level of Chinese manufactured goods will have a very significant global spillover effect.
- The BRESL economies will be working together on harmonizing energy performance test procedures. The development of a more rational testing regime will facilitate the identification of energy-using products, which will be useful to both policymakers and consumers.
- The BRESL economies will be working together on development of MEPS for the six products, and in some cases, aligning, or at least coordinating MEPS levels and target levels for high-efficiency endorsement. It is expected that these MEPS and EE target levels will be followed by a number of other Asian countries – in order to reduce the transaction costs associated with development new ES&L targets.
- It is expected that publicity surrounding the BRESL project, and the clear benefits that will accrue to the participating economies and will spur a “copy cat” effect in the region, as policymakers in the region become more aware of the benefits of ES&L and start planning and implementing programs.

Considering the barrier removal activities that will be carried out under BRESL, it is deemed that the GEF influence in achieving the abovementioned CO<sub>2</sub> emission reductions during the influence period, which in this case is until 2031, would be high, relative to that during the project period (i.e., 2007-2011). Building from the experience that will be gained in BRESL, other energy consuming appliance/equipment may become subject also to improved energy utilization performance. The indirect emission reductions may come from the development and enforcement of energy use standards for such appliance/equipment. Although the impacts would be high, it is estimated that BRESL impacts can be taken as conservatively 25% of the estimated cumulative CO<sub>2</sub> emission reductions (during and post-BRESL) from the use of the energy efficient BRESL products.

## Total CO<sub>2</sub> Emissions Reduction

**Table 21: Total Expected CO<sub>2</sub> Emissions Reduction Attributed to BRESL**

Particulars	Quantity (M tons)	Remarks
CO <sub>2</sub> Emissions During BRESL	37.3	Cumulative savings occurring in Year 4 (when MEPS are implemented) and Year 5 (when mandatory labeling is implemented).
CO <sub>2</sub> Emissions Post-BRESL	3,866.7	Cumulative reduction after 25 years, in 2031. Continued impact due to initial MEPS and follow-up labeling
Other Indirect CO <sub>2</sub> Emissions (Post-BRESL)	966.7	It is conservatively assumed that the “spin-off” impacts of the ES&L activities by the seven participating countries will be 25% of the anticipated CO <sub>2</sub> emissions during and after BRESL for the BRESL products.
<b>Total</b>	<b>4,870.7</b>	

**Total Expected CO<sub>2</sub> Emissions Reduction = 4,871 million tons**

## Part IV: Project Risks and Assumptions

While all efforts are made to ensure the effective design and implementation of the project activities, there are some risks that have to be addressed to ensure success of the project. The Project Planning Matrix (Sec II, Part II) shows a detailed overview of the project's risk and assumptions. The principal risks, which can potentially hinder the successful project implementation and/or reduce project effectiveness, relate to: (a) the sustainability of the support by key stakeholders in the participating countries; (b) lack of, or fading, interest of the private sector (particularly appliance/equipment manufacturers and suppliers); (c) ineffective project coordination at the national and/or regional levels; (d) failure of EE products to perform as claimed by manufacturers resulting to customer dissatisfaction; (e) unabated proliferation of illegally traded and unreliable EE equipment/appliances; and, (f) unwillingness of consumers to buy EE products due to bad experiences in the past and high initial cost may lead to failure of the project to induce increased sales and widespread use of EE equipment and appliances.

To address these risks, the project has to establish effective means to monitor and to the extent possible mitigate these risks. Mitigation measures include a strong emphasis on hands-on project management and participation of each country, mobilizing private sector participation and a continuous dialogue between the project's donors, implementing Partner, executing agency, regional organizations and national governments. The different risks that were identified during the BRESL project formulation exercise and the recommended mitigation measures are the following:

**Table 22: Summary of Risk Mitigation measures for the BRESL Project**

Risk	Level of Risk	Mitigating Actions
<p><b>Insufficient or Fading Support from the Government of the Participating Country</b> – Unanticipated shift of government energy program priorities leading to reduced technical and budgetary support to EC&amp;EE efforts, in general and ES&amp;L, in particular; Insufficient manpower and infrastructure in the agency with the ES&amp;L mandate leading to slow execution and poor enforcement regulatory mechanisms; and, Uncertainties to approval of the recommended ES&amp;L policy framework delaying implementation ES&amp;L programs.</p>	Moderate	<ul style="list-style-type: none"> <li>• During the project LPAC and inception meetings, government commitments to the project will be clearly established and confirmed, including the commitment to provide adequate project staff</li> <li>• Use of champions both in the government and private sectors to ensure implementation of formulated ES&amp;L policies</li> <li>• The project, through the demonstration on government purchasing schemes, will strongly recommend and lobby the implementing rules and regulations requiring government offices in participating countries to include energy efficiency as a criterion in the purchase of energy using equipment/appliances and products.</li> </ul>
<p><b>Ineffective local participation and coordination</b> The capacity of some of the participating countries to effectively coordinate and collectively implement this regional project maybe low. At times, the very limited available local capacity is fully absorbed on many externally funded projects thereby diverting attention from higher priority activities.</p>	Low to Moderate	<ul style="list-style-type: none"> <li>• Appointing dedicated project personnel to ensure efficiency of implementing project activities. The project will fund full-time National Coordinators in each participating country.</li> <li>• Lead government agencies will be part of the regional PSC and will play the lead role in the management of the implementation of the project activities in their respective countries.</li> </ul>

Risk	Level of Risk	Mitigating Actions
<p><b>Ineffective regional coordination and collaboration with regional organizations</b> Participating countries may continue to carry out ES&amp;L activities on their own losing the potentials for synergetic work towards wider achievement of ES&amp;L harmonization objectives</p>	Low	<ul style="list-style-type: none"> <li>• Regular meetings of the Regional PSC to exchange work programmes and implementation plans.</li> </ul>
<p><b>Lack of Cooperation by the Private Sector</b> - Private sector not participating adequately in the project, due to lack of interest, disruption to operation and business priorities. Financing of investments for manufacturers to modify their production facilities may not be available.</p>	Moderate	<ul style="list-style-type: none"> <li>• Industry associations, professional organizations, NGOs and private individuals in the participating countries will be consulted and involved in the annual project work planning.</li> <li>• Existing effective working relationships with industry and commercial sector associations will be further enhanced to ensure cooperation from their member entities to participate.</li> <li>• Encourage participation of the private sector in the country teams</li> </ul>
<p><b>EE Technology Risk</b> - Failure of EE products (equipment &amp; appliances) to perform as claimed by manufacturers resulting to customer dissatisfaction; Proliferation of illegally traded and unreliable EE products; Poor electricity supply infrastructure quality that may severely affect EE products with low tolerance to power fluctuations.</p>	Low	<ul style="list-style-type: none"> <li>• Serious implementation of EE standards, labeling &amp; warranty requirements.</li> <li>• Consumer education activities focus on use and application of wide range of EE products as well as consumer protection programs of the government.</li> <li>• Inclusion of capacity building and enabling environment activities, focused on each pilot schemes over a period of 5 years with the regular monitoring and progress reporting</li> </ul>
<p><b>EE Market Risk</b> - Unwillingness of consumers to buy EE products due to bad experiences in the past and high initial cost may lead to failure of the project to induce increased sales and widespread use of EE products (equipment &amp; appliances)</p>	Moderate	<ul style="list-style-type: none"> <li>• Assisting and empowering consumers to make real time, informed decision making when buying EE products.</li> <li>• Promotion of suitable financing, incentives, and government mass purchasing programs will be developed and their implementation facilitated under the BRESL project.</li> </ul>
<b>OVERALL</b>		<b>Moderate</b>

Based on enquiries from stakeholders made through the BRESL Survey, the overall project risk is moderate. BRESL is designed to facilitate close coordination and consultation of the relevant stakeholders in each participating country in each of the proposed activities. Activities that provide policies, product standards, guidelines and incentives, tools and procedures to implement ES&L programs, information and education are sufficient to ensure mitigation of the risks. Government agencies (particularly those with the ES&L mandate), their partners and a number of regional organizations have committed to financially support the project and use part of their budget in the next 5 years for BRESL.

At the inception stage of BRESL the project risks and assumptions will be reviewed, and where necessary additional project risks will be identified. In addition, also as part of the project inception activities, a detailed risk management strategy for project implementation will be prepared.

## Part V: Monitoring & Evaluation Plan and Budget

The following summarizes the annual targets for high-level success indicators that will be monitored to gauge the effectiveness and impacts of the BRESL project. More detailed indicators for each project activity are shown in the Project Planning Matrix (Part II).

**Table 23: Annual Targets for Project Outcomes**

Project Strategy	Success Indicators	Annual Targets					
		Yr 0	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
<b>GOAL</b>	GHG emission reductions, MMT/yr	0	0	0	0	11.3	24.8
<b>OBJECTIVE</b>	Electricity savings, GWh/yr	0	0	0	0	11,600	27,800
	Reduction in product energy usage	0	0	0	2.5% (1% for motors)	5% (2% for motors)	10% (4% for motors)
	Market share of efficient products			Base set in Activity 2.4	1.1X base	1.15X base	1.25X base
<b>OUTCOMES</b>							
Component 1: Policy Making	ES&L principles in laws & regulations of participating countries				4 countries adopt new laws & regs		
	New standards for AC, refrigerators, ballasts, motors, fans and CFLs				Approved in 4 countries		10% avg savings for affected products
	New standards for rice cookers				Adopted in China		20% reduction in electricity use
	Labels in use						At least 2 products in 5 countries
Component 2: Capacity-Building	New testing standards				At least one in at least 4 countries		
	New test facilities					At least 1 improved or new facility in at least 2 countries	
	Countries with testing and certification procedures in place				At least 6 countries		
	Round-robin testing					Complete	
	Mutual recognition agreements					At least 3 countries sign	
	Posting of certification info						At least 4 countries posting



Project Strategy	Success Indicators	Annual Targets					
		Yr 0	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
	Annual data collection system				4 countries have system in place	Annual data collection continues	Annual data collection continues
Component 3: Manufacturer Support	Number of local manufacturers adding efficient products and attributable in part to project interventions						At least 5 manufacturers develop new efficient products
	Number of new efficient products					25	50
	Percent of manufacturers involved in project who agree that ES&L can provide opportunities to increase profitability					50%	
Component 4: Regional Cooperation	Project website		Up	Regularly updated			
	Regional workgroup - # participating countries		5	5	5	5	5
	Follow-up plan						Approved
Component 5: Pilot Projects	Government procurement schemes operating	2	2	2	4	4	5
	On-line databases of efficient equipment	1	1	1	3	3	3
	New consumer education schemes implemented -- # of countries				3		5

Countries with supplementary activities under each component of the BRESL project will develop their specific M&E plans for tracking progress and assessing impacts. Inasmuch as such activities are part and parcel, and contributing to the achievement of the objectives, of BRESL, their M&E plans will by and large be also based on the project planning matrix in Table 14. Each task that will be carried out under the supplementary activities will be monitored in terms of the appropriate output indicators (for the activity deliverables) and the impact indicators (for the impacts). As part of the tasks that will be carried out for each in-country supplementary activity, the country team will come up with its M&E plan that will set up the time lines for the realization of the task deliverables and verification of the impacts.

## Monitoring Plan

The following table summarizes the monitoring plan for the high-level success indicators of the BRESL Project.

**Table 24: Monitoring Plan for BRESL**

Success Indicators	Targets (EOP)	Means of Verification	Sampling Frequency	Location
GHG emission reductions	24.8 MMT/yr	<ul style="list-style-type: none"> <li>Monitoring reports on changes in average equipment efficiency and sales; to be provided by participating governments to the PMU</li> </ul>	Annually, starting with year 3	PMU
Electricity savings	27,800 GWh/yr	<ul style="list-style-type: none"> <li>Same as above</li> </ul>	Same as above	PMU
Reduction in product energy usage	10% (4% for motors)	<ul style="list-style-type: none"> <li>Same as above.</li> </ul>		
Market share of efficient products	1.25X baseline identified in year 2	<ul style="list-style-type: none"> <li>Same as above.</li> <li>Other publications and documents on sales and saturation rates of energy-efficient equipment provided by each country.</li> </ul>	Same as above	PMU
ES&L principles in laws & regulations of participating countries	4 countries adopt new laws & regs	<ul style="list-style-type: none"> <li>Official publications or documents on energy-efficiency regulations and policies provided by each selected country.</li> <li>National statistics on standards and labeling programs as reported on APEC Energy Standards Information System (<a href="http://www.apec-esis.org">www.apec-esis.org</a>)</li> <li>Annual reports to the PMU by each participating country</li> <li>Project visits and surveys.</li> </ul>	Annual as part of country reports to PMU	Countries, compiled and checked by PMU
New stds for AC, refrigerators, ballasts, motors, fans and CFLs	Approved in 4 countries	<ul style="list-style-type: none"> <li>Same as above.</li> </ul>	Same as above	Same as above
New stds for rice cookers	Adopted in China	<ul style="list-style-type: none"> <li>Same as above.</li> </ul>	Same as above	Same as above
Labels in use	At least 2 products in 5 countries	<ul style="list-style-type: none"> <li>Same as above.</li> </ul>	Same as above	Same as above
New testing standards	At least one in at least 4 countries	<ul style="list-style-type: none"> <li>Same as above.</li> </ul>	Same as above	Same as above
New test facilities	At least 1 improved or new facility in at least 2 countries	<ul style="list-style-type: none"> <li>Annual reports to the PMU by each participating country</li> <li>Project visits and surveys.</li> </ul>	Same as above	Same as above
Countries with testing and certification procedures in place	At least 6 countries	<ul style="list-style-type: none"> <li>Same as above</li> </ul>	Same as above	Same as above
Round-robin testing	Completed	<ul style="list-style-type: none"> <li>Report on round-robin testing results</li> </ul>	Completed by end of Year 4	Coordinated by PMU
Mutual recognition	At least 3	<ul style="list-style-type: none"> <li>Memorandums of</li> </ul>	Annual as part	Countries,

Success Indicators	Targets (EOP)	Means of Verification	Sampling Frequency	Location
agreements	countries sign	Understanding on regional cooperation on testing and certification	of country reports to PMU	compiled and checked by PMU
Posting of certification info	At least 4 countries posting	<ul style="list-style-type: none"> <li>• Annual reports to the PMU by each participating country</li> <li>• PMU staff check of country websites</li> </ul>	Same as above	Same as above
Annual data collection system	4 countries have system in place	<ul style="list-style-type: none"> <li>• Annual reports to the PMU of each participating country</li> <li>• Project visits</li> </ul>	Same as above	Same as above
Number of local manufacturers adding efficient products and attributable in part to project interventions	About 60 (i.e., 10 per country; 2-3 per BRESL product)	<ul style="list-style-type: none"> <li>• Survey of manufacturers receiving reports and technical assistance</li> <li>• Annual reports to the PMU of each participating country</li> </ul>	Annual, beginning in year 3	PMU
Number of new efficient products	50	<ul style="list-style-type: none"> <li>• Survey of manufacturers receiving reports and technical assistance</li> <li>• Annual reports to the PMU of each participating country</li> </ul>	Same as above	PMU
Percentage of manufacturers that plan to locally produce EE products.	50%	<ul style="list-style-type: none"> <li>• Survey of manufacturers receiving reports and technical assistance</li> <li>• Annual reports to the PMU of each participating country</li> </ul>	Same as above	PMU
Project website	Up, regularly updated	<ul style="list-style-type: none"> <li>• Annual reports of the PMU</li> <li>• UNDP-China staff check website</li> </ul>	Annual	PMU, UNDP-China
Regional workgroup - # participating countries	At least 5	<ul style="list-style-type: none"> <li>• Annual reports of the PMU</li> </ul>	Annual	PMU, UNDP-China to check
Follow-up plan	Approved & implementation begins	<ul style="list-style-type: none"> <li>• Approved plan</li> </ul>	Year 5	Same as above
Government procurement schemes operating	5	<ul style="list-style-type: none"> <li>• Official documents on government procurement policies</li> <li>• Final evaluation reports on government procurement pilots</li> <li>• Annual reports to PMU by each participating country</li> </ul>	Annual, beginning in year 3	PMU
On-line databases of efficient equipment	3	<ul style="list-style-type: none"> <li>• Annual reports to the PMU by each participating country</li> <li>• PMU staff check on-line databases</li> </ul>	Same as above	PMU
New consumer education schemes implemented -- # of countries	5	<ul style="list-style-type: none"> <li>• Final reports on pilot schemes</li> <li>• Annual country reports to PMU</li> </ul>	Same as above	PMU

## Monitoring & Evaluation Budget

The following table summarizes the budget for the various monitoring & evaluation (M&E) activities that will be carried out to manage and gauge the effectiveness of the BRESL project implementation. The table also shows the parties responsible for each M&E activity and the time frame of each activity.

**Table 25: M&E Budget for BRESL Project**

Type of M&E Activity	Responsible Parties	Budget US\$ <i>Excluding project team Staff time</i>	Time frame
Inception Workshop (IW)	<ul style="list-style-type: none"> <li>▪ Project Manager</li> <li>▪ UNDP-China</li> <li>▪ UNDP/GEF</li> </ul>	Included in PMO budget	Within first 2 months of project start up
Inception Report (IR)	<ul style="list-style-type: none"> <li>▪ Project Team</li> <li>▪ UNDP China</li> <li>▪ UNDP/GEF</li> </ul>	Included in PMO budget	a) Draft IR available before IW b) Final IR available immediately following IW
Measurement of Means of Verification	<ul style="list-style-type: none"> <li>▪ Project Manager</li> <li>▪ Project team members</li> </ul>	Included in PMO budget	Start, mid and end of project
Measurement of Means of Verification for Project Progress and Performance (measured on an annual basis)	<ul style="list-style-type: none"> <li>▪ Oversight by UNDP-GEF Technical Advisor and PM</li> <li>▪ Measurements by regional field officers and local IAs</li> </ul>	Included in PMO budget, and the demonstration activities	Annually prior to APR/PIR and to the definition of annual work plans
APR and PIR	<ul style="list-style-type: none"> <li>▪ Project Team</li> <li>▪ UNDP China</li> <li>▪ UNDP-GEF</li> </ul>	Included in PMO budget	Annually
Multi-Partite Review (MPR) and MPR report	<ul style="list-style-type: none"> <li>▪ GOB Counterparts</li> <li>▪ UNDP China</li> <li>▪ Project team</li> <li>▪ UNDP-GEF RCU</li> </ul>	Included in PMO budget	Every year, upon receipt of APR
PAC/MPR Meetings	<ul style="list-style-type: none"> <li>▪ Project Manager</li> <li>▪ UNDP China</li> </ul>	Included in PMO budget	Following Project IW and subsequently at least once a year
Periodic status reports	<ul style="list-style-type: none"> <li>▪ Project team</li> </ul>	Included in PMO budget	To be determined by Project team and UNDP China
Technical reports	<ul style="list-style-type: none"> <li>▪ Project team</li> <li>▪ Hired consultants as needed</li> </ul>	Included in Component 2	To be determined by Project Team and UNDP China
Mid-term External Evaluation	<ul style="list-style-type: none"> <li>▪ Project team</li> <li>▪ UNDP- China</li> <li>▪ UNDP-GEF RCU</li> <li>▪ External Consultants (i.e. evaluation team)</li> </ul>	\$45,000	At the mid-point of project implementation.
Final External Evaluation	<ul style="list-style-type: none"> <li>▪ Project team</li> <li>▪ UNDP China</li> <li>▪ UNDP-GEF RCU</li> <li>▪ External Consultants</li> </ul>	\$30,000	At the end of project implementation
Terminal Report	<ul style="list-style-type: none"> <li>▪ Project team</li> <li>▪ UNDP China</li> <li>▪ External Consultant</li> </ul>	Included in line above	At least one month before the end of the project
Lessons learned	<ul style="list-style-type: none"> <li>▪ Project team</li> <li>▪ UNDP China</li> </ul>	Included in PMO budget	Annually

Type of M&E Activity	Responsible Parties	Budget US\$ <i>Excluding project team Staff time</i>	Time frame
Audit	<ul style="list-style-type: none"> <li>▪ UNDP-GEF RCU</li> <li>▪ UNDP China</li> <li>▪ Project team</li> </ul>	\$25,000 (\$5000/yr)	Annually
Visits to field sites (UNDP staff travel costs to be charged to IA fees)	<ul style="list-style-type: none"> <li>▪ UNDP China</li> <li>▪ UNDP-GEF RCU (as appropriate)</li> <li>▪ Government representatives</li> </ul>	Included in PMO budget	Annually
<b>TOTAL INDICATIVE COST</b> <i>Excluding project team staff time and UNDP staff and travel expenses</i>		US\$ 100,000	

## Annex A: How the BRESL Concept Paper Evolved into BRESL Project Document

**Table 26: Comparison of Components in Concept Paper and New Project Document**

<b>Component in GEF-Approved Project Concept</b>	<b>Description</b>	<b>How addressed in New Log Frame</b>
Component 1: ES&L Policy Making Enhancement Program.	Focus on capacity building on the policy and regulatory aspects of ES&L within national boundaries.	<p><b>Component 1: <i>Creation of legal and regulatory basis</i></b>  <b>Activity 1.1:</b> Strengthening of policy context for EE technologies  <b>Activity 1.2:</b> Adoption and implementation of ES&amp;L regulations  <b>Component 2: <i>Building of institutional and individual capacity</i></b>  <b>Activity 2.1:</b> Public institutions (and utility demand-side management (DSM) offices in some cases) strengthened</p>
Component 2: ES&L Awareness Enhancement and Promotion Program	Address regional network building and information sharing through database and network Allow both policymakers and manufactures to learn from other countries.	<p><b>Component 3: <i>Regional cooperation and information sharing on-going and helps to maximize impacts</i></b>  <b>Activity 3.1:</b> Web site with regional information developed and maintained  <b>Activity 3.2:</b> Lessons learned are assessed, documented and disseminated.  <b>Activity 4.1:</b> Project web site with regional information developed and maintained; provides umbrella for websites referenced in other components.  <b>Activity 4.2:</b> Lessons learned are assessed, documented and disseminated.</p>
Component 3: EE Equipment/Appliance Market Development Program	Building market for EE equipment and appliances Study equipment and appliance markets. Establish financing schemes	<p><b>Activity 2.2:</b> Capabilities to develop and implement standards and labeling for the 5 targeted products improved in each of the core-countries (Regional product working groups formed and meet at least annually for each of the five targeted products.)</p>
Component 4: ES&L Technical Support Program	Provide technical capacity building on ES&L for each country. Development or improve local manufacturing capacity for energy efficiency equipment; testing, accreditation, and compliances procedures both regionally and locally.	<p><b>Component 2: <i>Building of institutional and individual capacity to secure on-the-ground implementation</i></b>  <b>Activity 2.2:</b> Capabilities to develop and implement standards and labeling for the 5 targeted products improved in each of the core-countries  <b>Activity 2.3:</b> National and regional testing and certification infrastructure significantly strengthened.  <b>Component 3: <i>Regional cooperation and information sharing on-going and helps to maximize impacts</i></b></p>
Component 5: ES&L Demonstration Program	Implementation of several pilot ES&L programs to demonstrate various aspects of the development &	<p><b>COMPONENT 5: <i>Conduct of pilot activities showcasing various aspects of the design, facilitation and implementation of ES&amp;L programs</i></b></p>

Component in GEF-Approved Project Concept	Description	How addressed in New Log Frame
	implementation of ES&L programs and in the regional harmonization of ES test procedures and certification, and application of monitoring and evaluation tools.	
Component 6: Sustainable National & Regional ES&L Program	Ensuring the sustainability of the interventions that will be carried out under the BRESL project that will address the barriers to the widespread development and implementation of ES&L programs in the Asian region	<b>Activity 4.4:</b> Preparation of a Plan for Regional Activities and Coordination after the GEF-Funded Project Ends

## Annex B: Summary of Barriers Identified in Regional Survey

**Table 27: Barriers to Implementation of ES&L Programs in Asian Countries**

Country	Policy/Regulatory	Institutional	Technical	Information and Awareness	Market	Financial
Bangladesh	Lack of policy	No independent institution to carry out program	Lack of technical knowledge	To program to spread awareness	Lack of knowledge about the benefits of ES&L among sellers and buyers	Funding is not available
China	Country's growth model hindering the promotion and implementation of ES&L programs			Lack of public awareness on energy conservation		
Korea	Negotiations between manufacturers and stakeholders					No budget to develop a new standard
Malaysia <sup>55</sup>	No mandatory regulations		No lab for equipment efficiency testing		Market not driven to EE equipment	Lack of funding for ES&L programs
Philippines <sup>56</sup>		Lack of accredited testing laboratories	Lack of testing programs. Lack of training programs.	Insufficient public awareness due to lack of funding for programs	Market monitoring and sampling suffer due to lack of manpower and funds	Lack of funding for ES&L programs

<sup>55</sup> Malaysia participated in the BRESL Survey and in the BRESL project design. The country just recently decided to prioritize for GEF-4, national projects on RE (rural electrification) and EE (buildings and industries).

<sup>56</sup> The Philippines participated in the BRESL Survey. Because of limitations in its GEF-4 climate change allocations, it decided to withdraw from this regional project in favor of other national projects.



**Annex C: Baseline Data & Assumptions on BRESL Products**

**Table 28: Volume of Appliances in BRESL Countries (2004)**

Appliance <sup>57</sup>	Average Size	Saturation (unit/HH)	No. of Units (2004)	
			Stock <sup>58</sup>	Sold <sup>59</sup>
<b>Bangladesh</b>				
Air conditioners (4)	12,000 BTU/hr	0.07	529,250	70,570
Electric motors (1) (5)	4.2 kW		625,000	72,920
FTL Ballasts (2) (5)	14 W <sub>loss</sub>		21,000,000	2,665,380
Electric fans (3)	70 W	1.3	9,490,000	1,830,210
CFLs (5)	13 W		12,500,000	4,791,670
<b>China</b>				
Air conditioners (3)	1200 W	0.18	58,275,000	18,000,000
Ballasts for FTLs (1)	8 W <sub>loss</sub>		800,000,000	6,770,000
Electric fans (4)	70 W	0.22	70,000,000	50,000,000
CFLs (2)	15 W		1,170,000,000	117,000,000
Rice cookers (4)	600 W	0.31	100,000,000	20,000,000
<b>Indonesia</b>				
Refrigerators (4)	187.5 liters	0.25	5,933,750	791,170
Air conditioners (4)	12000 BTU/hr	0.07	1,703,750	227,170
Electric motors (1) (5)	4.2 kW		1,875,000	218,750
FTL Ballasts (2) (5)	14 W <sub>loss</sub>		63,000,000	7,996,150
Electric fans (3)	70 W	1.3	30,550,000	5,891,790
CFLs (5)	13 W		37,500,000	14,375,000
<b>Korea (1)</b>				
Refrigerators (2)	469 liters	1.04	16,627,800	1,575,000
Air conditioners (3)	20623 BTU/hr	0.42	6,715,080	2,056,000
Electric motors (4)	32.89 kW		387,657	361,802
CFLs (5)	15 W		17,001,136	14,361,230
<b>Thailand</b>				
Refrigerators (1)	250 liters	1.01	18,584,000	980,000
Air conditioners (1)	14996 BTU/hr	0.29	5,336,000	380,000
Electric motors (2) (5)	7 kW		2,500,000	750,000
FTL Ballasts (3)	10 W <sub>loss</sub>		84,000,000	12,000,000
Electric fans (5)	70 W	2.6	47,840,000	14,352,000
CFLs (4)	15 W		50,000,000	15,000,000
Rice cookers	650 W	0.99	18,216,000	5,464,800
<b>Vietnam</b>				
Refrigerators (3)	180 liters	0.27	4,300,000	573,330
Air conditioners (3)	12000 BTU/hr	0.07	1,100,000	146,670
Electric motors (1)	5.25 kW		1,000,000	116,670
FTL Ballasts (2)	12 W <sub>loss</sub>		33,600,000	4,264,620
Electric fans (3)	70 W	1.77	28,300,000	5,457,860

<sup>57</sup> Appliances listed are only those that the country will be working on under the BRESL Project

<sup>58</sup> Stock is either calculated as saturation x number households, or from market estimates. For China, estimates for appliance stocks are from CNIS

<sup>59</sup> Sales figures assume 5% new units and stock turnover of 10% for refrigerator, AC, motors, 20% for ballasts, fans, and rice cookers, and 30% for CFLs

Appliance <sup>57</sup>	Average Size	Saturation (unit/HH)	No. of Units (2004)	
			Stock <sup>58</sup>	Sold <sup>59</sup>
CFLs (4)	15 W		20,000,000	7,666,670
Rice cookers (3)	650 W	0.66	9,200,000	1,380,000

**NOTES:**

**A. Bangladesh**

1. Motor size based on Thailand but discounted 40%
2. Assumed losses for standard magnetic ballasts
3. Fan data based on Thailand, but saturation discounted 50%
4. AC data based on Thailand, but size discounted 25%, avg. electricity use discounted 25%, and saturation and stock discounted 75%
5. Motors, ballast, and CFL stock based on Thailand but discounted 75%

**B. China**

1. Assumed losses for standard magnetic ballasts (China has MEPS for ballasts)
2. Assumed that 15W CFLs used to replace 60W incandescent lamps
3. AC saturation assumes urban saturation of 0.7; rural saturation of 0.05; and urban/rural mix of 0.2/0.8; hourly operation average of approx 2,000 hrs/year in South, and 300 hrs/yr in North
4. Motor, fan, and rice cooker size and average operation based on CNIS data

**C. Indonesia**

1. Motor size based on Thailand but discounted 40%
2. Assumed losses for standard magnetic ballasts
3. Fan data based on Thailand, but saturation discounted 50%
4. Refrigerator and AC data based on Thailand, but size discounted 25%, avg. electricity use discounted 25%, and saturation discounted 75%
5. Motors, ballast, and CFL stock based on Thailand but discounted 75%

**D. Korea, South**

1. All data are from label registrations for 1995-2004, without a sales weighted average
2. Refrigerator values exclude the Kim chi refrigerator
3. Average monthly AC consumption is 427.7 kWh/yr, but it is used only 2 months per year, according to KS C 9306-2002
4. Electric motors limited to 3-phase induction motors
5. Assumed that 15W CFLs used to replace 60W incandescent lamps

**E. Thailand**

1. Size and use data for refrigerators and ACs based on EGAT labeling data
2. Size, stock, and sales data for motors based on data from International Copper Association (ICA)
3. Assumed losses for standard magnetic ballasts
4. Assumed that 15W CFLs used to replace 60W incandescent lamps
5. Motor and fan sales assume 5 year lifetime and annual increase based on new sales of 10%

**F. Vietnam**

1. Motors data based on Thailand; size adjusted downward 25%; stock adjusted downward 60%
2. Assumed losses for standard magnetic ballasts; stock based on Thailand, but adjusted downward 60%
3. Data for refrigerator, AC, fans, rice cookers based largely on survey by DSM Cell of Electricity of Vietnam
4. Assumed that 15W CFLs used to replace 60W incandescent lamps; stock based on Thailand, but adjusted downward 60%

**NOTES on Pakistan:**

Appliances and equipment used in domestic and commercial buildings consume more than 50% of the total electricity in Pakistan. The shares of electric lighting, fans, refrigerators/freezers, electric irons, room air-conditioners, air coolers and other household appliances being used in the residential and commercial sector electricity consumption are 33.69%, 33.19%, 12.24%, 8.03%, 4.55%, 1.07% and 7.23%, respectively.

The following are the historical annual electricity consumption (GWh) for electrical appliances in the country's residential and commercial sectors:

Sector	2001	2002	2003	2004	2005	2006
Domestic	22765	23210	23624	25846	27601	30720
Commercial	2247	2390	2607	2988	3305	3831

Source: Pakistan Energy Yearbook 2006, HDIP

The following are the aggregate % energy savings that can be expected from the issuance of energy labels and MEPS, based on the share of the various electrical appliances in the combined electricity consumption of the residential and commercial sectors in Pakistan:

Appliance/Equipment	% Energy Savings
Refrigerators	1.0%
Room air conditioners	0.4%
Electric motors	0.3%
Electric fans	6.3%
Compact fluorescent lamps	1.6%

Table 29: Description of Assumptions Used in Baseline and Alternative Scenarios<sup>60</sup>.

Limits on Equipment Efficiency

Appliance/Equipment	Limit (kWh/yr)	Efficiency improvement	Comments
Refrigerators	205	50%	US saved 66% in 30 years; Australia saved 60% in 20 years
Room air conditioners	1,042	30%	Assumes current equipment is 9 EER and limit is 13
Electric motors	20,231	7.65%	Based on example that current average motor is 84.7% efficiency (US "standard" efficiency) and best is 91.7% (U.S. premium efficiency)
Ballasts for FTLs	5	75%	Current average losses are 7.7W and electronic ballasts can get down to 2 W of losses (or even better)
Electric fans	102	30%	Assumption
Compact fluorescent lamps	20	10%	Assume quality and performance standards can improve efficacy 10% (up to 15% possible)
Rice cookers	138	30%	Assumes insulation can save up to 30%

Sales increases

Baseline & Alternative Assumption	5.0%	Annual increase in sales from 2005-2025 (See Annex E)
Special case for CFLs	5.0%	Annual increase in sales relative to BAU starting in Year 4 -- indicating increased replacement of incandescent lamps
	2.75	Multiple of annual CFL unit consumption to savings per incremental CFL sold due to GEF program

BAU Efficiency Increase (without BRESL Project)

Appliance/Equipment	BAU increase in efficiency (% improvement per year)
Refrigerators	1.0%
Room air conditioners	1.0%
Electric motors	0.2%

<sup>60</sup> Based mainly on the findings/results of the BRESL Survey and desk studies conducted during the BRESL PDF-A exercise

Ballasts for FTLs	1.0%
Electric fans	0.5%
Compact fluorescent lamps	0.0%
Rice cookers	0.5%

**Effects of EE labels (due to BRESL Project)**

Appliance/Equipment	Increase in efficiency for labels, starting in Year 5 (% improvement per year, relative to previous year, not BAU)
Refrigerators (1)	2.0%
Room air conditioners	2.0%
Electric motors (2)	0.4%
Ballasts for FTLs (3)	2.0%
Electric fans (4)	1.0%
Compact fluorescent lamps	0.2%
Rice cookers (5)	1.0%

Note: For CFLs, small increase in efficacy assumed, but most CFL savings come from increased sales relative to incandescent

**Effects of MEPS**

Appliance/Equipment	MEPS savings, relative to BAU (in Year 4)
Refrigerators	10%
Room air conditioners	10%
Electric motors	4%
Ballasts for FTLs	30%
Electric fans	20%
Compact fluorescent lamps	5%
Rice cookers	20%

### Assumed Equipment Lifetimes

Appliance/Equipment	Lifetime (Years)	Reference
Refrigerators	12	Based on ERM 1999 study used as basis for Thai MEPS
Room air conditioners	12	Based on ERM 1999 study used as basis for Thai MEPS
Electric motors	15	Based on ERM 1999 study used as basis for Thai MEPS; includes rewinding
Ballasts for FTLs	13	Based on ERM 1999 study used as basis for Thai MEPS
Electric fans	7	Assumption
Compact fluorescent lamps	3	Assumption
Rice cookers	10	Assumption

### CO2 Emissions Factors (MMT CO2/GWh)

Country	Emissions Factor	Source
Mean average of emissions factors	0.00077	
Bangladesh	0.000943	UNDP
China	0.00109	UNDP
Indonesia	0.000757	UNDP
Republic of Korea	0.000767	UNDP
Pakistan	0.000737	NEAP
Thailand	0.000674	UNDP
Vietnam	0.00043	UNDP

### Annex D. Overview of Project Impacts in Terms of Energy Savings and CO2 Emissions Reductions, by Country

Notes: Baseline and Alternative energy consumption CO<sub>2</sub> emissions are for products directly addressed in each country in the BRESL Project. The Alternative electricity savings and emissions reductions are calculated as percent of electricity used and CO<sub>2</sub> produced by products participating in BRESL Project. The difference between Baseline and Alternative electricity consumptions does not translate to electricity savings, since electricity savings also include reductions from reduced purchases of incandescent lamps, and these are calculated at 2.75 times annual unit electricity consumption of CFLs.

#### Electricity Savings and CO2 Emission Reduction from Application of Energy Labels and MEPS

##### Bangladesh

Year	BAU Elec Use GWh/yr	Alt. Elec Use GWh/yr	Elec savings GWh/yr	% reduction	Cumul. elec savings GWh/yr	BAU CO2 emission MMT/yr	GEF CO2 emission MMT/yr	CO2 reduction MMT/yr	% reduction	Cumul CO2 reduction MMT	National CO2 Emission (2004) MMT/yr	Percent of 2004 National CO2 Emissions
2007	6,614	6,614	0	0.00%	0	6.237	6.237	0	0.00%	0	20.188	0.00%
2011	13,945	13,560	385	2.76%	619	13.15	12.787	0.363	2.76%	0.583	-	1.80%
2021	31,885	28,957	2,928	9.18%	19,463	30.068	27.307	2.761	9.18%	18.353	-	13.68%
2031	50,098	45,626	4,472	8.93%	63,291	47.243	43.025	4.218	8.93%	59.683	-	20.89%

##### China

Year	BAU Elec Use GWh/yr	Alt. Elec Use GWh/yr	Elec savings GWh/yr	% reduction	Cumul. elec savings GWh/yr	BAU CO2 emission MMT/yr	GEF CO2 emission MMT/yr	CO2 reduction MMT/yr	% reduction	Cumul CO2 reduction MMT	National CO2 Emission (2004) MMT/yr	Percent of 2004 National CO2 Emissions
2007	160,859	160,859	0	0.00%	0	176.016	176.016	0	0.00%	0	2401.055	0.00%
2011	334,164	321,554	12,610	3.77%	19,974	365.65	351.852	13.798	3.77%	21.856	-	0.57%
2021	642,001	536,937	105,064	16.37%	667,711	702.493	587.529	114.964	16.37%	730.626	-	4.79%
2031	964,366	817,003	147,363	15.28%	2,144,111	1,055.23	893.984	161.248	15.28%	2,346.14	-	6.72%

**Indonesia**

Year	BAU Elec Use GWh/yr	Alt. Elec Use GWh/yr	Elec savings GWh/yr	% reduction	Cumul. elec savings GWh/yr	BAU CO2 emission MMT/yr	GEF CO2 emission MMT/yr	CO2 reduction MMT/yr	% reduction	Cumul CO2 reduction MMT	National CO2 Emission (2004) MMT/yr	Percent of 2004 National CO2 Emissions
2007	21,340	21,340	0	0.00%	0	16.154	16.154	0	0.00%	0	77.063	0.00%
2011	45,026	43,766	1,260	2.80%	2,009	34.084	33.131	0.953	2.80%	1.52	-	1.24%
2021	101,954	92,199	9,755	9.57%	63,908	77.179	69.795	7.384	9.57%	48.378	-	9.58%
2031	159,661	144,269	15,392	9.64%	210,318	120.863	109.212	11.651	9.64%	159.211	-	15.12%

**Korea**

Year	BAU Elec Use GWh/yr	Alt. Elec Use GWh/yr	Elec savings GWh/yr	% reduction	Cumul. elec savings GWh/yr	BAU CO2 emission MMT/yr	GEF CO2 emission MMT/yr	CO2 reduction MMT/yr	% reduction	Cumul CO2 reduction MMT	National CO2 Emission (2004) MMT/yr	Percent of 2004 National CO2 Emissions
2007	192,368	192,368	0	0.00%	0	147.521	147.521	0	0.00%	0	254.918	0.00%
2011	421,840	416,690	5,150	1.22%	7,930	323.496	319.547	3.949	1.22%	6.082	-	1.55%
2021	1,072,823	1,025,480	47,343	4.41%	281,226	822.716	786.41	36.306	4.41%	215.664	-	14.24%
2031	1,707,988	1,634,510	73,478	4.30%	974,328	1,309.81	1,253.46	56.347	4.30%	747.183	-	22.10%

**Pakistan**

Year	BAU Elec Use GWh/yr	Alt. Elec Use GWh/yr	Elec savings GWh/yr	% reduction	Cumul. elec savings GWh/yr	BAU CO2 emission MMT/yr	GEF CO2 emission MMT/yr	CO2 reduction MMT/yr	% reduction	Cumul CO2 reduction MMT	National CO2 Emission (2004) MMT/yr	Percent of 2004 National CO2 Emissions
2007	33,761	33,761	0	0.00%	0	24.882	24.882	0.000	0.00%	0.000	21.251	0.00%
2011	39,359	35,580	3,778	9.60%	2,785	29.008	26.223	2.785	9.60%	2.785	-	13.11%
2021	53,355	48,233	5,122	9.60%	36,078	39.322	35.547	3.775	9.60%	36.078	-	17.76%
2031	67,350	60,885	6,466	9.60%	79,274	49.640	44.872	4.768	9.61%	79.274	-	22.44%



**Thailand**

Year	BAU Elec Use GWh/yr	Alt. Elec Use GWh/yr	Elec savings GWh/yr	% reduction	Cumul. elec savings GWh/yr	BAU CO2 emission MMT/yr	GEF CO2 emission MMT/yr	CO2 reduction MMT/yr	% reduction	Cumul CO2 reduction MMT	National CO2 Emission (2004) MMT/yr	Percent of 2004 National CO2 Emissions
2007	87,189	87,189	0	0.00%	0	58.765	58.765	0	0.00%	0	84.924	0.00%
2011	188,303	184,489	3,814	2.03%	5,858	126.916	124.346	2.57	2.02%	3,948	-	3.03%
2021	452,291	422,168	30,123	6.66%	190,125	304,844	284.541	20.303	6.66%	128.144	-	23.91%
2031	716,617	670,482	46,135	6.44%	619,626	483	451.905	31.095	6.44%	417.628	-	36.62%

**Vietnam**

Year	BAU Elec Use GWh/yr	Alt. Elec Use GWh/yr	Elec savings GWh/yr	% reduction	Cumul. elec savings GWh/yr	BAU CO2 emission MMT/yr	GEF CO2 emission MMT/yr	CO2 reduction MMT/yr	% reduction	Cumul CO2 reduction MMT	National CO2 Emission (2004) MMT/yr	Percent of 2004 National CO2 Emissions
2007	13,698	13,698	0	0.00%	0	5.89	5.89	0	0.00%	0	16.77	0.00%
2011	28,854	28,052	802	2.78%	1,298	12.407	12.062	0.345	2.78%	0.558	-	2.06%
2021	65,398	59,343	6,055	9.26%	40,784	28.121	25.517	2.604	9.26%	17.537	-	15.53%
2031	102,823	93,092	9,731	9.46%	133,959	44.214	40.029	4.185	9.47%	57.602	-	24.96%

**ANNEX E: ELECTRICAL APPLIANCES MARKET REPORTS**  
**(Extracts from Global Information, Inc., 2006)**

The following are concise description of selected appliance market reports in the Asian region (particularly China and South Korea). These, among others, were utilized as bases for the assumptions made in forecasting market share and volume projections for the 6 EE products covered under the BRESL project.

**Domestic Electrical Appliances in China**

Growth is beginning to diminish as products such as fridge freezers become more mature. Other home appliances are still underdeveloped like automatic washer dryers, and most small home appliances. Products such as microwaves and irons, although seeing stable growth over the review period, are starting to show signs of maturity. Some products, such as air conditioners, are perceived as being saturated in large cities, but continue to witness vigorous growth in secondary cities and rural areas.

A very low level of product awareness with regard to small kitchen appliances, like rice cookers<sup>61</sup> contribute to a mixed future outlook for small electrical appliances.

Manufacturers seek to consolidate in face increasingly fierce competition - From refrigeration to air treatment appliances, the process of large players acquiring their smaller counterparts is prevalent. Apart from the already highly concentrated sales revenue, the volume shares of most product types tend to be dominated by the top players. Concentration is not only shaped by market forces, which favor the larger players, but the enthusiasm of the major electrical appliance groups for merger and acquisition activity. At least five such events occurred in 2004/5, having a profound impact on the market's structure.

Changing consumer lifestyles favor premium segment - As well as the movement of retail sales, manufacturers' activities were largely affected by changes in consumer lifestyles over the review period. 2005 was a year of new premium products, a trend evident across the market, especially in refrigeration appliances and home laundry appliances. With busier lifestyles many consumers are demanding home appliances with more features with which require minimal effort in usage. Meanwhile, Chinese consumers are more influenced the promotion of specialty chains, and are becoming new-product-friendly.

While the small and mid-sized cities saw a high level of competition in sales of home appliances, sales of many electrical appliances remained small or negligible in rural areas over the review period. This situation is due largely to the lack of distribution network and purchasing power in these areas. Such regions offer potential for future growth, and are expected to see increased focus by manufacturers in coming years.

Large domestic electrical appliances manufacturers in China launched new products to stimulate demand and regain momentum in the saturated environment, e.g., 3-door and side-by-side refrigerators. For increasingly saturated home electrical appliances, price cutting is also a frequently adopted strategy to maintain brand share, especially when product innovation is difficult to achieve. Most products, even small home appliances, suffered deceleration of value growth over the review period. To stimulate demand, manufacturers and retailers are utilizing

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<sup>61</sup> Rice cookers are widely used in Asian countries like Thailand, Vietnam, Malaysia and Indonesia. Rice cookers, along with pod coffee makers, represented the highest volume small kitchen appliance in 2005 in North America, and is expected to have high growth in the next 5 years (The Worldwide Market for Small Household Appliances - 2006 Edition)

every method possible, including changes to packaging, product innovation and seasonal promotion, in order to encourage consumption.

### **Domestic Electrical Appliances in South Korea**

Both volume and value sales of domestic electric appliances in South Korea improved in 2005. The construction industry recovered and performed well, aiding the sales of domestic electrical appliances. In addition, consumer sentiment, which was lowest in 2004, bounced back in 2005. Air treatment products led the growth in both volume and value, due to the extremely hot weather forecast that increased the consumer base. Rising energy prices alarmed South Korean consumers, and resulted in the growth of electric heating appliances over oil-based appliances.

The major topic in domestic electrical appliances in 2005 was 'premium'. Premium products, such as side-by-side refrigerators, accounted for 65%-80% in terms of volume of domestic home appliances replacing regular products. Domestic sales that previously showed a negative growth turned around in 2005 with 5%-8% growth, due to premium product sales. However, low-priced home appliances, such as energy efficient and refurbished second hand appliances, also sold so strongly that the polarization phenomenon in consumption got even wider in 2005.

Weather affects home electrical appliances sales – Increasing ambient weather temperature has resulted in soaring sales of domestic electrical appliances to deal with the hot weather soared. Manufacturers promptly started the reservation sales, and production lines were in full operation to meet the flood of orders.

All-in-one products - one machine for multi-purposes - attracted attention due to their advantages of time and space saving, as well as economy. Also, many of these products functioned so effectively that they quelled the common idea that all-in-one products were inefficient. However, there were some questions about whether such multi-functions were really what users needed. Along with the multi-functional products, interest in built-in appliances also grew in 2005.

### **World Commercial Refrigeration Equipment to 2010**

World demand for commercial refrigeration equipment is projected to increase over four percent per year through 2010, exceeding \$27 billion. Demand in the Asia/Pacific region will outpace the global average, rising nearly six percent annually through 2010. China will be the fastest growing national market, benefiting from above-average urban population growth and healthy gains in fixed investment, as well as rising income levels. Above-average growth will also occur in India due to solid gains in the number of households with refrigerators and rising per capita incomes. The other developing countries of Asia and Africa/Mideast will also post strong gains, reflecting rising standards of living in the regions.

China has grown into a major supplier of refrigeration equipment, taking advantage not only of its inexpensive labor pool, but also of favorable exchange rates, which have made pricing of Chinese goods especially competitive.

### **White Goods in China**

Filling the 500 million or so households in China with appliances progresses apace - This is great news for China's electricity generating companies, but the appliance manufacturers and retailers are struggling to maintain a margin in this cut-throat, cut-price, pile-'em-high and sell-'em-cheap market. Still, leading producers and retailers seem to be making money somehow. The total white goods market in China grew by 61.81% between 1999 and 2005. Although not a fast growing

market by Chinese standards, the market is still expanding by about 8.21% per annum - very respectable for a relatively mature sector. Significantly, competition in the market is reaching unprecedented levels, making price more important than ever before.

Rapid economic growth following the introduction of open-door policies in 1979 has helped to create a massive consumer market in China. This growth has transformed the lives of ordinary Chinese, raising worker incomes, pushing up overall living standards and strengthening consumers' purchasing power. White goods and household appliances have benefited considerably, with demand amongst the new urban wealthy especially strong.

As the market has matured, so competition for market share has increased amongst the country's numerous white goods manufacturers, which in turn have been forced to take ever-tighter margins on product sales. With ownership levels of basic white goods in some categories at saturation point, manufacturers are now focusing on re-sales and product upgrades rather than first-time purchases.

Tough competition has prompted companies to work harder to find the niche sector sales of new products and win over an increasingly well-informed consumer constituency demanding higher quality, improved technology and value for money. Price-cutting has therefore been a key feature of the market recently, with manufacturers forced to cut costs at every stage of product design, distribution, marketing and retail.

Yet the incentives for white goods firms are enormous. The total value of non-food retail sales grew an impressive 85.02% climb between 1998 and 2004. This steep climb reflects higher disposable incomes a greater consumer confidence as younger, wealthier consumers choose to spend their cash rather than save for the future.

This sea change in consumer attitudes towards spending reflects increased confidence in the government's economic and political policies - in sharp contrast to the uncertainties of the pre-reform era. Factors driving this change include: an increased desire for knowledge as China's integration with the global community gathers pace; higher disposable incomes and increased purchasing power amongst younger consumers; the emergence of an aspirational middle class in major cities; and ever-cheaper goods produced by both local and foreign manufacturers.

### **World Major Household Appliances to 2009**

World demand for major household appliances (white goods) is projected to increase over three percent annually through 2009, exceeding 380 million units. Gains will surpass the 1999-2004 pace due to accelerating global economic growth, which will stimulate consumer spending activity, a major determinant of appliance demand.

Demand in the Asia/Pacific region, in particular India and China, will continue to benefit from above average urban population growth and healthy gains in the number of households. China in particular has grown into the world's largest supplier of white goods, nearly tripling production from 1994 to 2004. The nation has taken advantage not only of its inexpensive labor pool but also of favorable exchange rates, which have made pricing of Chinese goods especially competitive. China has become a leading producer in the refrigerator and microwave oven segments, where products are exported to the US, Western Europe and throughout Asia.