

Minimum Energy Performance Standards: Issues and Co-operation Potentials

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I I E C



Presentation Outline



- **About IIEC**
- **Minimum Energy Performance Standard (MEPS) and Energy Labeling – Overview**
- **Designs and Implementation Issues**
- **International Collaborations on MEPS and Labeling**
- **Co-operation Potentials**



About IIEC



Global Presence with Local Implementation



MEPS & Labeling - Overview



I I E C



MEPS and Labeling - Global Importance

- 
- Use of energy in buildings, including appliances, equipment, and lighting ~ 40% of total energy consumption
 - This contributes ~35% of energy-related CO2 emissions
 - Most products that will use energy in buildings in 2020 have not yet been built
 - **Mandatory Energy Efficiency Standards**
 - Remove inefficient products from the workplace
 - **Energy Labels**
 - Influence consumer and manufacturer decisions
- 
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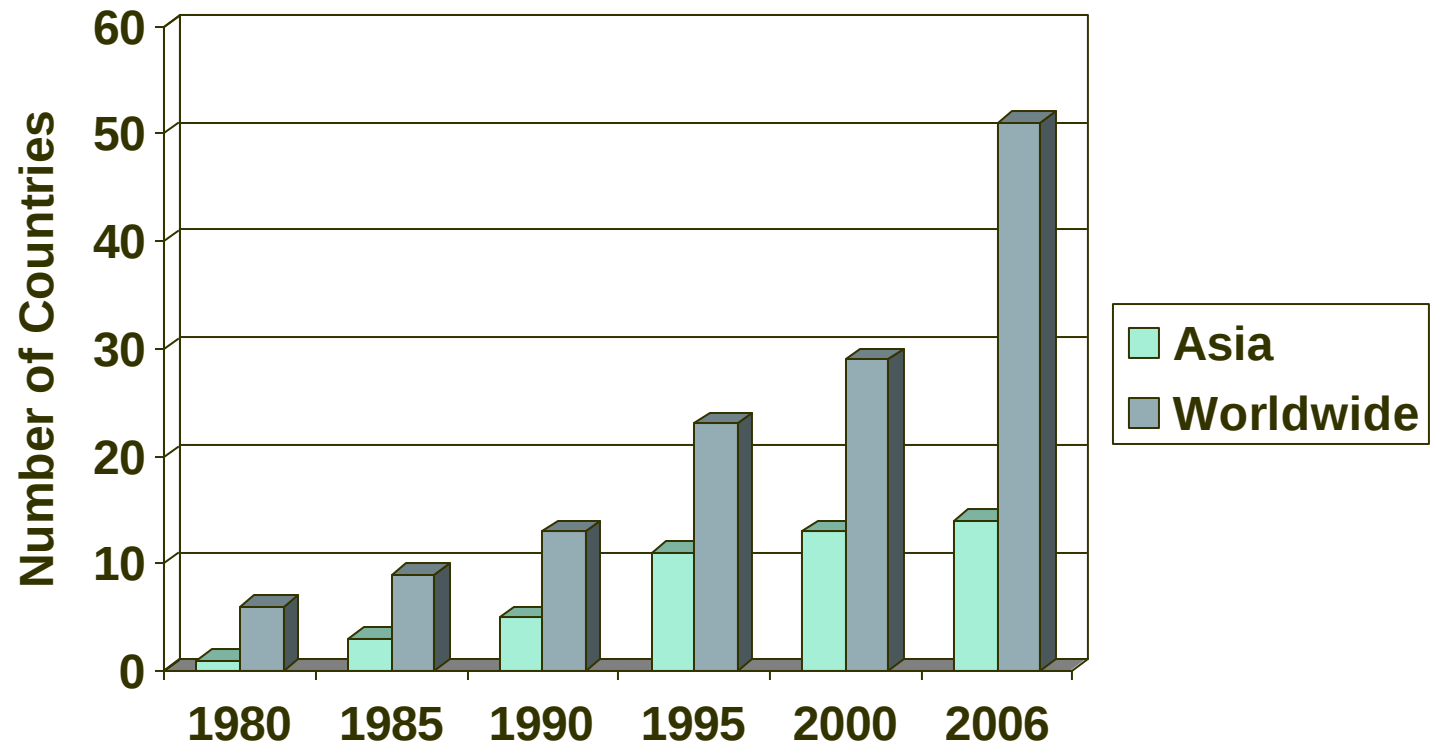
Source: S&L Guidebook, 2nd Edition



S&L Worldwide Snapshot

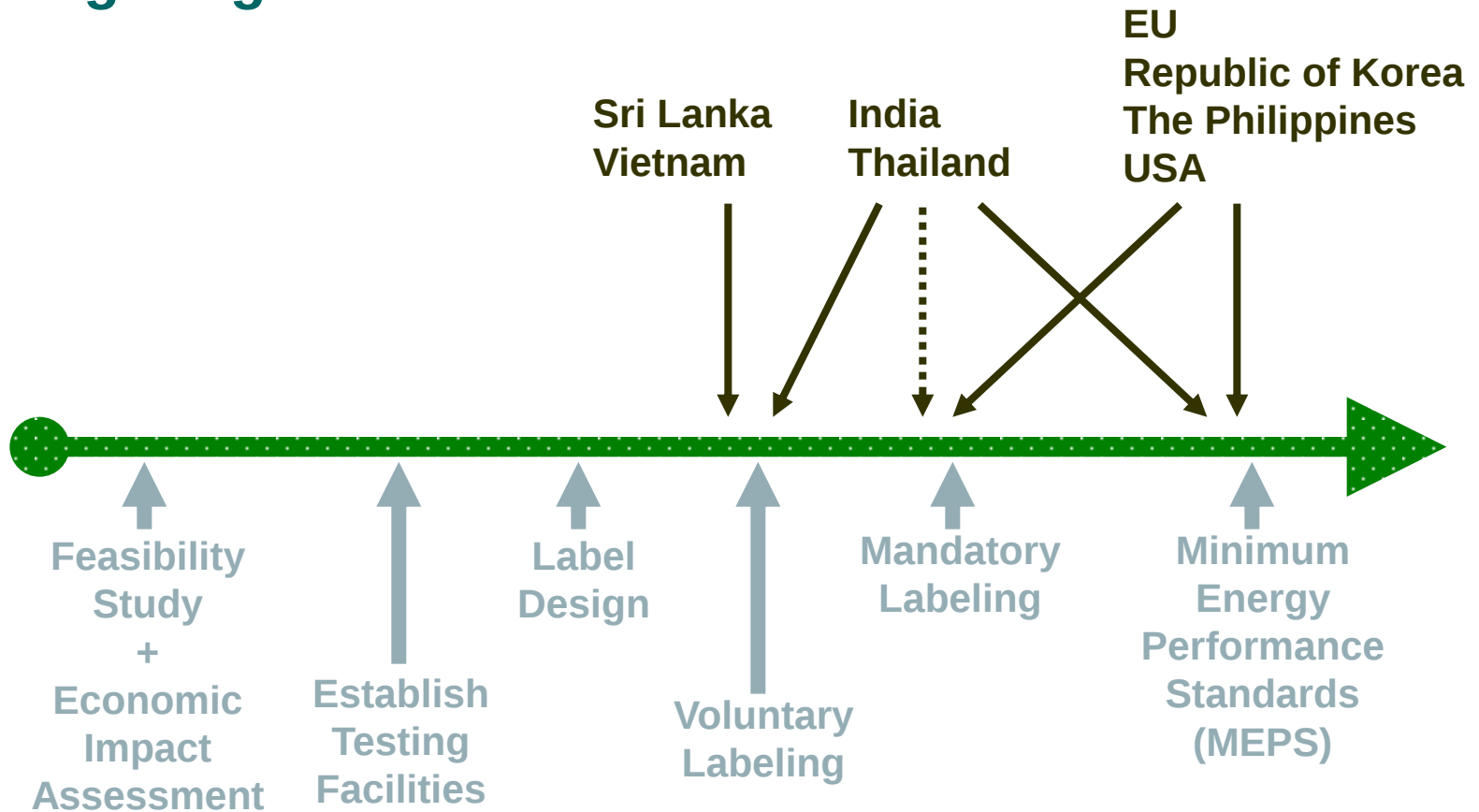


Cumulative Number of Countries with S&L Programs in Asia and Worldwide



Typical Steps in Developing S&L

Lighting Product



Design and Implementation Issues





Design and Implementation Issues



- **Screening of Appliances, Equipment and Lighting Products**
- **Considerations for specific products in priority**
 - Energy Performance Measurement
 - Energy and Non-Energy Criteria
 - Assessment of Economic Impacts
- **Compliance and Check Testing**





Screening of Energy Using Products



- **A broad feasibility study normally serves this requirement**

- International review
- Prioritize Appliances, Equipment and Lighting Products
- Testing infrastructure needs assessment
- Program design



- **More detailed studies for specific products in priority to determine:**

- Energy performance measurement
- Benchmarking local energy performance profile
- Energy and non-energy criteria
- Economic impacts





Energy Performance Measurement for Lighting Products



- **Energy performance measurement**
 - Measurement of electricity consumption = Input
 - Measurement of output → Light = Output
 - Determination of Energy Performance → Output/Input
- **Issues related to each specific product**
 - Lamp - Lumen per Watt is widely used.
 - Ballast – International standards available for input/output measurements but for determination of energy performance do not exist
 - Interpretation of testing methodologies specified in international testing standards





Case Study – Energy Performance Measurement for Lighting Products



Product	Energy Performance Indicator
Lamp (FL, CFL, HID)	• Lumen per watt
Ballast	• BEF – Canada, China, Japan*, Korea*, USA • Total Input Power – EEI – Australia/New Zealand, EU, Thailand** • Watt loss – Malaysia**
Luminaire	• Light Output Ratio (LOR) – Thailand • Lighting Fitting Efficiency Code (LFEC) – UK • NEMA LER - USA

Note:

*Japan and Korea use slightly different formula to calculate BEF

**Malaysia and Thailand is considering to propose MEPS for ballast using EEI (harmonized with EU)





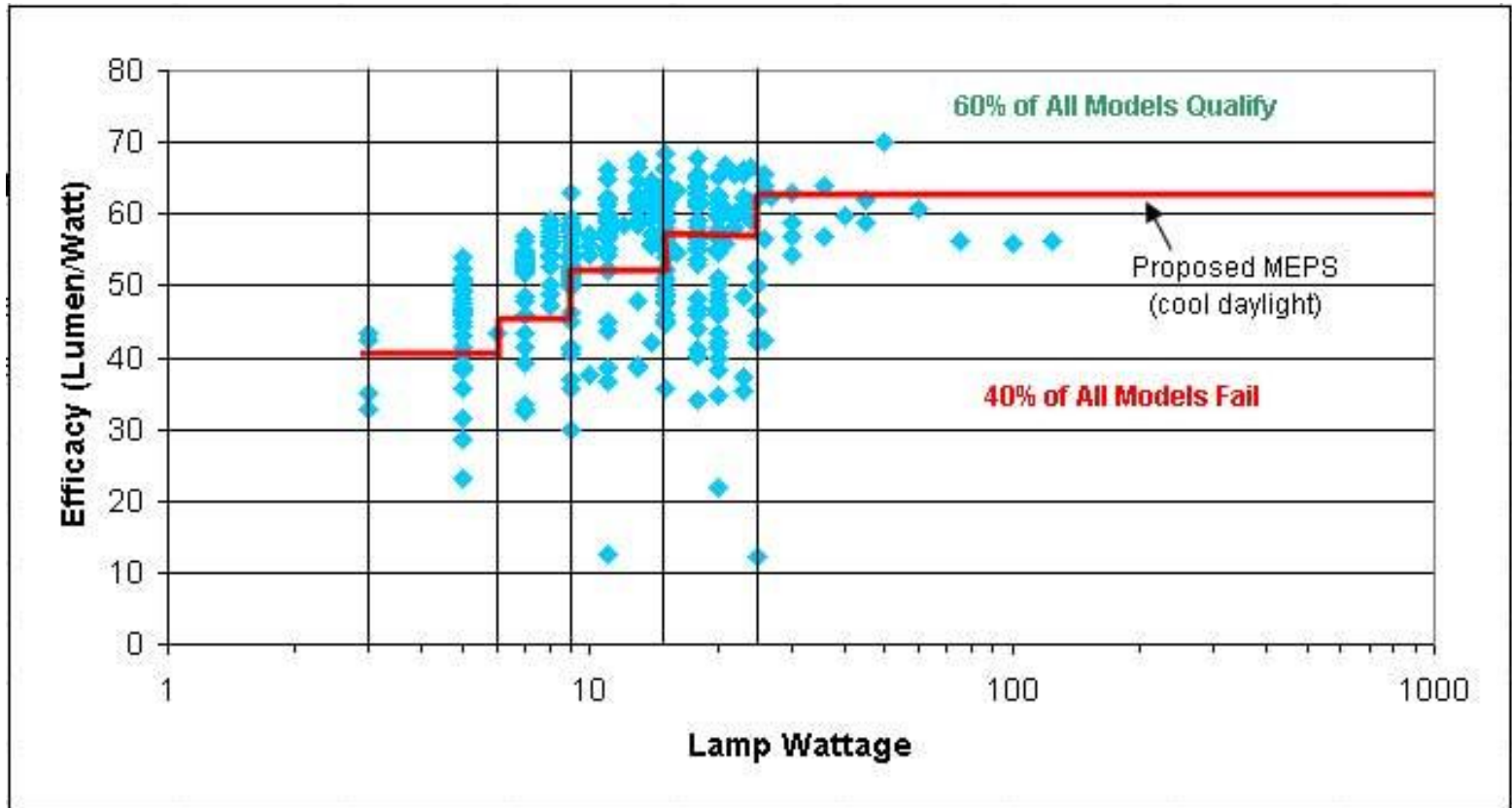
Energy and Non-Energy Criteria



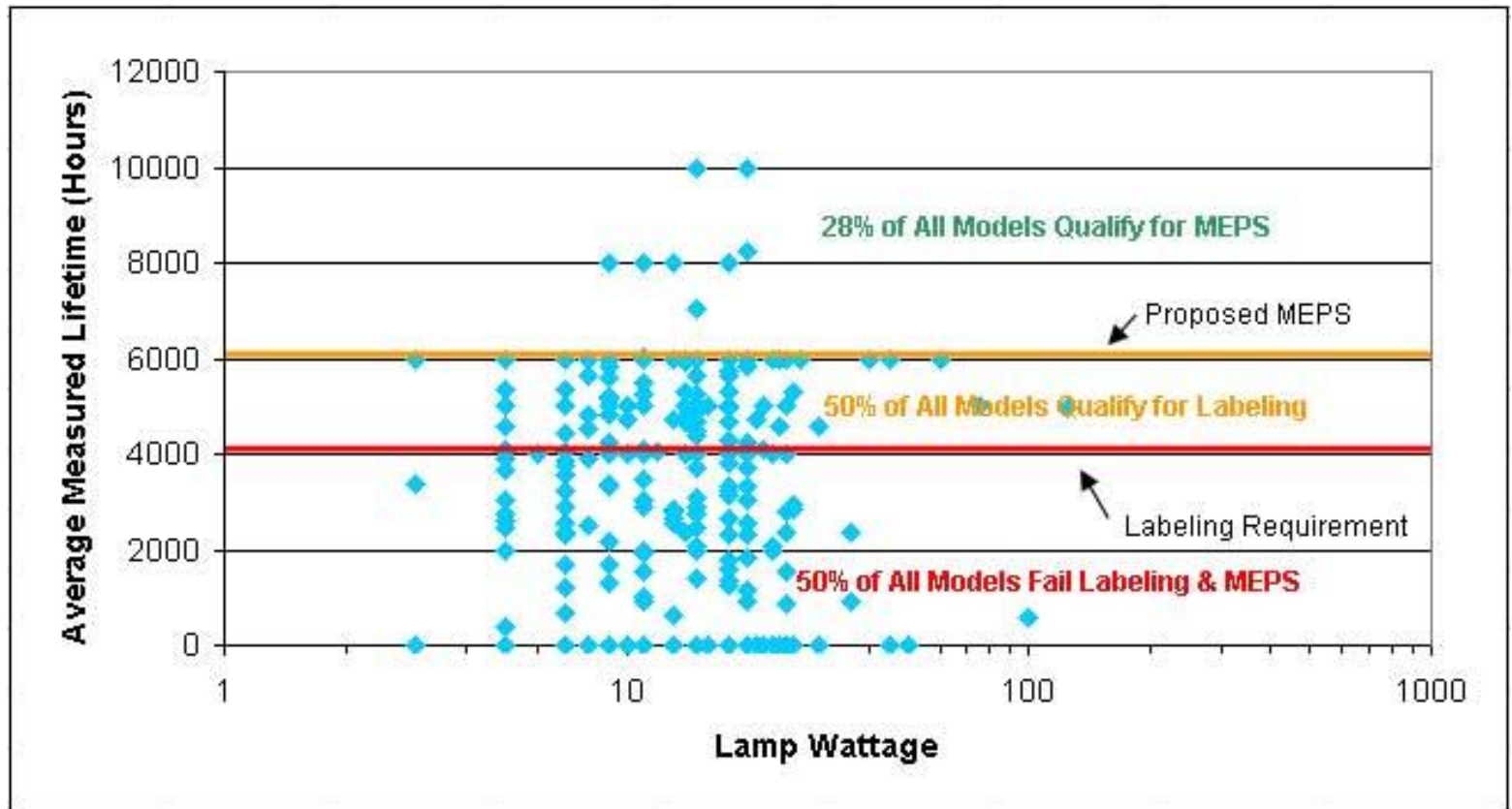
- **In addition to energy performance criteria, non-energy performance are also important to MEPS and Labeling**
 - Lamp – lifetime, color rendering index (CRI)
 - Electronic Ballast – Electromagnetic Compatibility (EMC)
- **How policy makers/program designers choose the right combination of energy and non-energy criteria?**
 - International guidelines and best practices are not available.



Example – Energy Performance Criteria



Example – Non-Energy Performance Criteria





Assessment of Economic Impacts of Products in Priority



- Very important - helping policy makers to decide the right performance levels that suit the local context.
- Results can also be used to verify actual impacts of MEPS and Labeling following years of implementation
- Though it is important, many countries still implement MEPS and Labeling with only limited understanding on costs and benefits of the programs.





Compliance and Check Testing



- The process is crucial to the program effectiveness.
- However, compliance and check testing in many developing countries are relatively weak, probably due to:
 - Limited Budget
 - Bureaucratic and weak policing process



International Collaborations on MEPS & Labeling



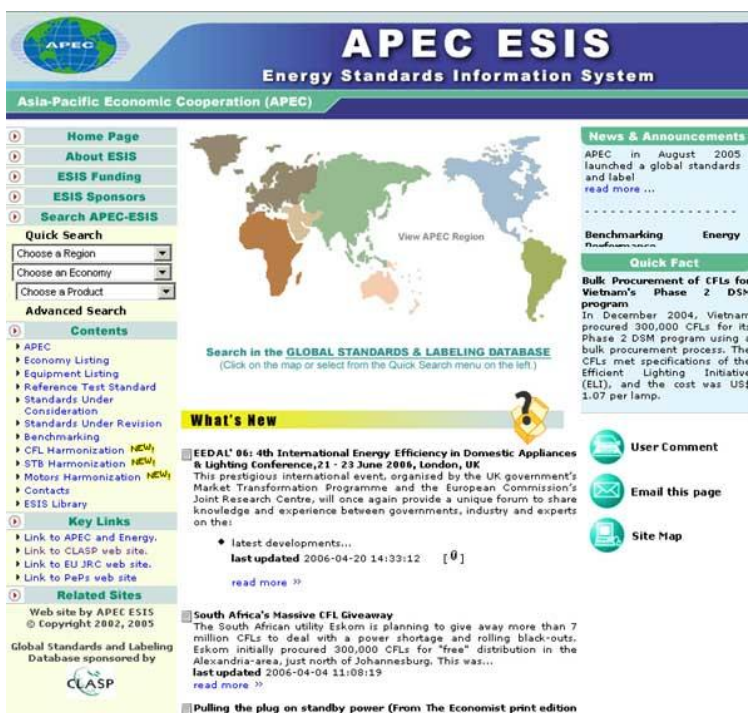
Information Sharing - Global S&L Database



- Internet-based database providing details of MEPS and Labeling programs in more than 80 countries around the World
- Jointly managed by APEC Energy Standards Information System (APEC-ESIS, www.apec-esis.org) and Collaborative Labeling and Appliance Standards Program (CLASP, www.clasponline.org)



apec-esis.org & clasponline.org



APEC ESIS
Energy Standards Information System
Asia-Pacific Economic Cooperation (APEC)

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Key Links
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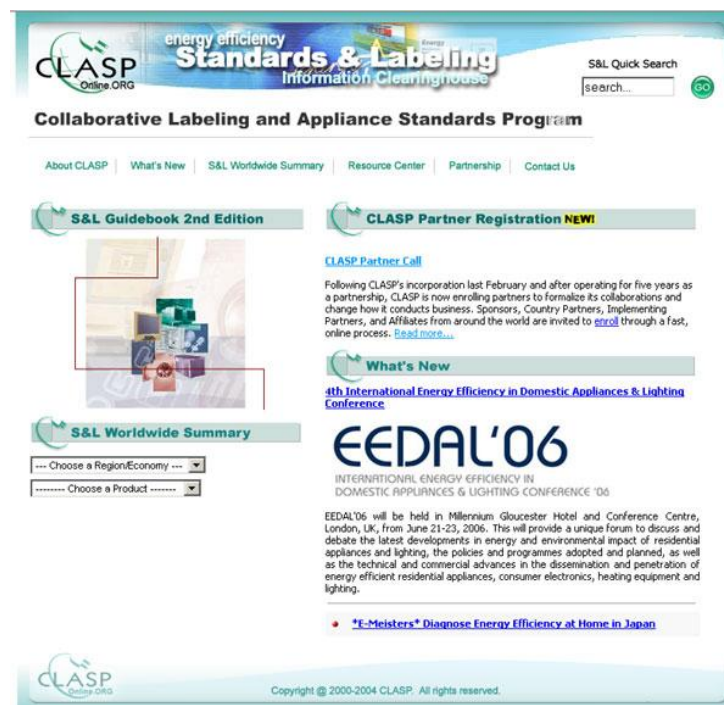
Related Sites
Web site by APEC ESIS
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Global Standards and Labeling Database sponsored by CLASP

What's New
EEDAL'06: 4th International Energy Efficiency in Domestic Appliances & Lighting Conference, 21 - 23 June 2006, London, UK
This prestigious international event, organised by the UK government's Market Transformation Programme and the European Commission's Joint Research Centre, will once again provide a unique forum to share knowledge and experience between governments, industry and experts on the...
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News & Announcements
APEC in August 2005 launched a global standards and label read more ...

Benchmarking
Energy
Quick Fact
Bulk Procurement of CFLs for Vietnam's Phase 2 DSM program
In December 2004, Vietnam procured 300,000 CFLs for its Phase 2 DSM program using a bulk procurement process. The CFLs met specifications of the Efficient Lighting Initiative (ELI), and the cost was US\$ 1.07 per lamp.

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S&L Guidebook 2nd Edition
CLASP Partner Registration **NEW!**
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Following CLASP's incorporation last February and after operating for five years as a partnership, CLASP is now enrolling partners to formalize its collaborations and change how it conducts business. Sponsors, Country Partners, Implementing Partners, and Affiliates from around the world are invited to enroll through a fast, online process. [Read more...](#)

What's New
4th International Energy Efficiency in Domestic Appliances & Lighting Conference
EEDAL'06
INTERNATIONAL ENERGY EFFICIENCY IN DOMESTIC APPLIANCES & LIGHTING CONFERENCE '06
EEDAL'06 will be held in Millennium Gloucester Hotel and Conference Centre, London, UK, from June 21-23, 2006. This will provide a unique forum to discuss and debate the latest developments in energy and environmental impact of residential appliances and lighting, the policies and programmes adopted and planned, as well as the technical and commercial advances in the dissemination and penetration of energy efficient residential appliances, consumer electronics, heating equipment and lighting.
• [*E-Meisters* Diagnose Energy Efficiency at Home in Japan](#)

S&L Worldwide Summary
--- Choose a Region/Economy ---
----- Choose a Product -----

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Standard Developments



- **Ongoing international standard harmonization efforts also provide better guidelines for policy makers and program designers of MEPS and Labeling, including:**

- International CFL Harmonization Initiative
- New IEC standard for ballast energy performance measurement
- IEC Environmental Committee is pushing the energy efficiency aspect of products and more IEC standards on energy performance will become available (but it still takes many years)





CFL Harmonization Initiative - CFLi



- Test methods for CFL are very similar (mostly based on IEC).
- So, a great potential for harmonization based around the existing IEC protocols
- However, the existing test methods require considerable interpretation, and this may also introduce variations in results, depending upon the assumptions made by individual laboratories.
- CFLi discussed and developed a new test method for electronic self-ballasted CFLs, and proposed to IEC.



Co-Operation Potentials



Development of Better Standards and Certifications

- **Comprehensive Testing Methodologies**

- International co-operations in development of tools and standards similar to CFLi should be strengthened so that policy makers and program designers in developing and emerging economies can benefit.

- **Discussion and negotiation is a part of international standard development process so regional and sub-regional co-operation are important to development of standards that are applicable to both developed and developing countries.**

- **One certification, applicable to all – e.g. Energy Star in IT products**



Thank you!

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