

Standards and Labels for Energy Efficiency

MDG



GLOBAL
ENVIRONMENT
FACILITY

“End-use energy efficiency, in particular for products and buildings, can become the most successful, cost effective, greenhouse gas emission abatement measure used by each and every country

—Brian Dawson, Climate Change Adviser, UNDP

What Are the Key Issues?

Energy consuming equipment in our daily life contributes to greenhouse gas emissions. The increase in demand for major appliances and equipment—ranging from refrigerators and clothes washers in homes, to copiers, water coolers, and lighting equipment in office buildings, to motorized equipment—will continue to grow in almost all parts of the world, leading to the sharp increase in energy use and CO2 emissions.

Climate Change Mitigation Starts in Our Buildings!

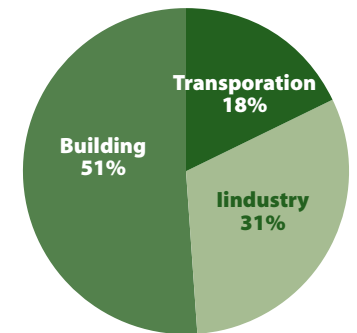
- 34% of the worldwide energy consumption comes from human activities in buildings.
- This energy consumption in buildings contributes 25-30% of energy-related CO2 emissions.
- Improving energy efficiency of appliances and equipment in buildings can help mitigate climate change significantly.

Energy Efficiency, a Necessity for Sustainable Development

Energy inputs such as electricity and fuels are essential to generate jobs, industrial activities, transportation, commerce, micro-enterprises and agriculture outputs. Electricity is required for improving **access to education**. Access to modern fuels improves **women's chances** of getting education or pursuing economic opportunities. A functioning energy system **reduces child mortality, improves maternal health**, and is essential for combating HIV/AIDS, malaria and other diseases. However, **cleaner and more efficient energy systems are needed**, as energy production, distribution and consumption has many adverse effects on the local, regional and global environment.

Source: UN-Energy, 2005.

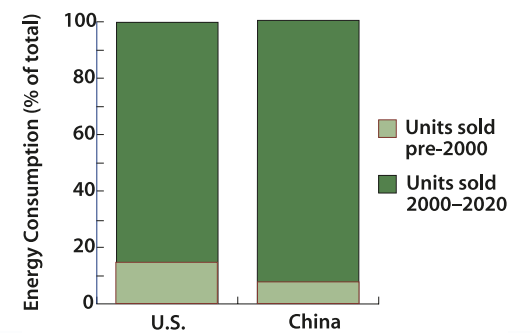
By the year 2020, **31% of energy use in developing countries will be in buildings.**



Source: A Standards & Labeling Guidebook for Appliances, Equipment, and Lighting, CLASP, 2005.

Appliances in developing nations are less energy efficient than in developed countries. For example, in Tunisia, domestic **refrigerators & freezers** consume **10% of the total national electricity production.**

Most products that will use energy in buildings in 2020 **have not yet been built.**



Source: A Standards & Labeling Guidebook for Appliances, Equipment, and Lighting, CLASP, 2005.

“Continued growth in energy use in buildings is likely to contribute to overstressing many already stressed economies and environments around the world.”

—Stephen Wiel, Lawrence Berkeley National Laboratory, CLASP, 2005



What Can Be Done?

Improving energy efficiency of energy-using products can dramatically reduce the cost of basic energy services, while ensuring the same or better quality of services. This also allows more people to benefit from energy services — such as home refrigeration — at the same level of investment infrastructures.

Transforming markets for more efficient end-use equipment can be greatly advanced by a specific policy intervention called: Energy Efficiency Standards & Labels.

What Are Energy Efficiency Labels and Standards?

Labels: Energy efficient labels are informative labels affixed to manufactured product products to describe the product’s energy performance (energy use, efficiency, or cost); these labels give consumers the data necessary to make informed purchases.

Standards: Energy-efficiency standards are regulations that prescribe the energy performance of manufactured products, sometime prohibiting the sale of products below minimum levels of efficiency.

Source: A Standards & Labeling Guidebook for Appliances, Equipment, and Lighting, CLASP, February 2005.

What Are the Advantages of Standards and Labels?

- They can produce very large energy savings
- They can be very cost effective and helpful at limiting energy growth without limiting economic growth
- They require change in the behavior of a manageable number of manufacturers rather than the entire consuming public

- They treat all manufacturers, distributors, and retailers equally
- The resulting energy savings are generally assured, comparatively simple to quantify, and readily verified



What Are the Results?

- In the U.S., the appliance standards are resulting in a reduction in carbon emissions of 4 to 5% of 1990 levels in the 2000 to 2010 time period while adding \$33 to 49 billion to the economy.

What Are the Main Lessons for the Future?

Some Considerations Regarding Creating Effective Energy Standards & Labels Programmes

- Verify that efficiency labels and standards are appropriate as a basic element of your country's energy policy portfolio.
- Apply your scarce resources to the products likely to provide the greatest public welfare.
- Select/announce programs for specific products only when you’ve identified the necessary resources.
- Allocate sufficient time and resources to adopt a common product-testing procedure for each major appliance. Focus first on certification of test laboratories and test facilities; if appropriate, leave actual testing to manufacturers and third-party testing organizations. Whenever possible, participate in regional or global harmonization of test procedures, and establish alliances with other nations working toward that goal.
- Plan for involvement of manufacturers and all other interested stakeholders at appropriate

- stages in the processes of program design, label design, label specifications development, and standards-setting.
- If you’re new to standards-setting and labeling and have very limited resources, consider starting with a voluntary labeling program until you are comfortable and the stakeholders are ready for a more ambitious program.
- Allocate sufficient time and resources to analyze the effects of any potential standards. The more the standards level remains grounded in a thorough, objective technical analysis, the greater the likelihood of political sustainability and subsequent compliance.
- Be open to input from all stakeholders, and proceed in a transparent and responsive manner. Focus on what is best for the country in the long term. Be prepared to withstand strong political pressure.
- Allocate sufficient resources to monitor, evaluate, and report the impacts of programs.

Source: A Standards & Labeling Guidebook for Appliances, Equipment, and Lighting, CLASP, February 2005.

HOW ENERGY STANDARDS AND LABELS (S&L) CONTRIBUTE TO THE MILLENNIUM DEVELOPMENT GOALS

Development Challenge	Energy Linkages and Interventions	Contribution of Standards & Labels (S&L)
Alleviating poverty in developing countries (i.e. MDG 1)	<ul style="list-style-type: none">• Energy services, such as electricity and fuels, are an essential input to generate jobs, commerce, micro-enterprises, and other income-generating activities. ∑	<ul style="list-style-type: none">• S&L reduce the energy needed for providing people and businesses with energy-services, thus allowing for more energy-services at the same investment level or allowing more people to access modern energy service.
Increasing opportunities for women (i.e. MDG 3) ∑	<ul style="list-style-type: none">• Access to modern energy services eases the burden's of a woman's domestic life, which in many developing countries requires hours of energy intensive activities. ∑	<ul style="list-style-type: none">• Energy efficient products deliver important savings on energy bills, allowing for more services per household at the same cost.• S&L provide women with the choice to get more energy services (e.g. lighting and household tools) out of the same energy supply.
Reducing child mortality and improving maternal health (i.e. MDG 4-5) ∑	<ul style="list-style-type: none">• By improving standards of health centers and providing safe, potable water, energy services help lower child disease and mortality rates.• Lack of electricity in health clinics and lack of illumination for nighttime deliveries, contribute to poor maternal health conditions, especially in rural areas. ∑	<ul style="list-style-type: none">• S&L make essential services cheaper to run and maintain, for instance, hospitals and clinics in rural areas and for food refrigeration in private homes.• S&L support this goal, by delivering these benefits at a much lower running cost, thus increasing the sustainability of energy initiatives.
Ensure environmental sustainability (i.e. MDG 7) ∑	<ul style="list-style-type: none">• Reduce the “push” factor in rural-urban migration by improving energy services in rural areas.• Take advantage of new technologies to avoid energy-intensive, environmentally unsound development paths. ∑	<ul style="list-style-type: none">• S&L allow for more energy services (more affordable and a limited amount of energy goes further). In rural areas, this allows for a much faster deployment of energy services.• Energy efficient end-uses also contribute to limit the risk of blackouts and reduce urban air pollution associated with production of energy.