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# A global transition to efficient lighting

**T**he demand for electricity is set to rise dramatically. For lighting alone, electricity consumption is expected to increase by 60 per cent in the next 20 years. Today, lighting is responsible for 19 per cent of global electricity consumption and for six to eight per cent of global greenhouse gas emissions (GHG). The good news is that the technology is here to enable a global transition to lighting efficient enough to slash emissions by half.

## The move to energy efficient lighting

Lighting worldwide is responsible for 1,900 million tonnes of CO<sub>2</sub> a year meaning that the potential for reductions in GHG emissions is enormous. Around 40 per cent of future global energy demand for lighting could be avoided by switching to efficient lightbulbs. The shift from inefficient incandescent bulbs to energy efficient compact fluorescent (CFLs) or light-emitting diodes (LEDs) would cut world lighting energy demand significantly, saving countries, businesses and households considerable sums in reduced electricity bills. Few actions could reduce carbon emissions as cheaply and easily as the phase-out of inefficient lighting.

Market forces are not sufficient to achieve the rapid transformation needed in the lighting market to respond to the climate change challenge. Instead, a multi-stakeholder global partnership is required to support countries as they embark upon efficient lighting transformation programmes. As two of the biggest lighting manufacturers in the world, we have chosen to focus our efforts on transforming the lighting market in partnership with UNEP through its en.lighten initiative. With its unparalleled global network, UNEP can provide leadership by inspiring and enabling nations to prioritise efficient lighting and reap the benefits of lowered energy costs.

Whereas activities aimed at phasing out inefficient technologies have been introduced in recent years in a

number of countries, experience indicates that global co-ordination is required to assist countries as they embark upon efficient lighting transformation programmes. Support is necessary to provide countries with the required know-how to make the transition successful, both in terms of the economic gains and the associated reduction of GHG emissions.

A number of countries and regions in the world have initiated successful steps in order to move to efficient lighting. In 2009, the EU banned traditional incandescent bulbs of 100 watts or more, a decision that will save about 32 million tonnes of CO<sub>2</sub> a year. Together with energy efficiency regulations, the ban will save about €11 billion a year (US\$15.3 billion). In Australia, where the legislation of efficiency standards will result in a ban on incandescent bulbs this year, more than 30 terawatt hours (TWh) of electricity and 28 million tonnes of GHG emissions are expected to be saved between 2008 and 2020.

With the above activities as examples of what is possible, the UNEP en.lighten initiative has seized the opportunity to lead the engagement required with developing and emerging countries, governments and the private sector to achieve a global market transformation to efficient lighting.

## Private sector and the UN in partnership to en.lighten the world

The UNEP en.lighten initiative was created in 2009 as a partnership between UNEP, Philips Lighting and OSRAM, with support of the Global Environment Facility (GEF). The initiative addresses the challenge of accelerating global market transformation to environmentally sustainable lighting technologies by developing a global strategy in support of the gradual phase-out of inefficient lighting. This will reduce global GHGs from the lighting sector and also reduce mercury released from coal combustion.

The initiative aims to strengthen country, government and private sector capacity to lead successful lighting market transformation programmes through:

- the development of a global policy strategy to gradually eliminate inefficient and obsolete lighting products;
- the promotion of high performance and efficient lighting technologies in developing and emerging nations;
- the substitution of traditional fuel-based lighting with efficient alternatives.

The en.lighten initiative has created global taskforces where international experts from developing, emerging and developed countries and sectors are working on a global approach to phase out inefficient incandescent lamps. Another key element of the initiative is the development of strategies to assist countries in establishing sound collection and recycling systems, an area where we have many lessons and experiences to share.

### Off-grid lighting: a solution to the plight of millions

More than 1.6 billion people around the world do not have access to grid-based technology and use over 77 billion litres of kerosene each year for lighting, emitting more than 190 million tonnes of CO<sub>2</sub> per year in the process. Kerosene is dangerous to its users and to the environment. Medical experts warn that kerosene smoke is unhealthy and the open flame lanterns are dangerous.

The presence of artificial light can extend the hours of productivity, often leading to job creation as retailers can stay open longer, construction can continue into dusk, small local industries can thrive and evening education classes become more viable. According to the World Bank, poor infrastructure is responsible for a growth rate reduction of at least two per cent in Africa.

“The challenge of this generation is to deliver energy to the billions of people around the world without access to the grid in a way that does not contribute to humanity’s global environmental footprint, including impact on the climate,” said Achim Steiner, UN under-secretary general and UNEP executive director. “To do this we need innovative and creative solutions and partnerships that bring together governments, businesses and communities in common cause.”

The private sector has become involved with various projects such as the OSRAM ‘Umeme Kwa Wote’, meaning Energy for All, an off-grid project which began in April 2008 in Nairobi, Kenya. The efficient lighting project has seen the establishment of energy hubs around the Kenyan shores of Lake Victoria and in Uganda. The hubs offer customers with a leasing model for solar-charged mobile lighting systems that can replace kerosene lanterns both for night fishing and home use. Additionally, the energy hubs offer the service of charging mobile phones and selling clean drinking water that has been treated by a solar-powered UV-filtration plant.

Philips has been working with NGOs in Ghana on domestic solar-powered lighting solutions since early 2008 and in November 2009 announced the world’s first self sustaining solar-powered LED football floodlighting solutions. For the first time, in both Kenya and South

Africa, communities were able to enjoy games of football in the evenings in areas which had never witnessed electric light before.

Through the UNEP en.lighten initiative and on the basis of the successful experiences we have gained in African countries, we aim to provide support to developing and emerging countries in setting the appropriate frameworks needed to accelerate the spread of off-grid lighting technologies, bringing light to those who need it.

*Martin Goetzeler is President & CEO of OSRAM. He joined OSRAM as CFO in Italy and became Managing Director of OSRAM UK in 2001. From 2002 he was the CFO of OSRAM SYLVANIA in Danvers, USA. Since May 2005 Martin Goetzeler is the President & Chief Executive Officer of OSRAM, one of the two largest lighting manufacturers in the world.*

*Rudy Provoost is Executive Vice-President and CEO of Philips Lighting, member of the Board of Management, Royal Philips Electronics and Chairman of the Philips Sustainability Board. Mr. Provoost joined Philips in October 2000 as CEO of the European regional sales and was appointed CEO of the Consumer Electronics division in 2004 and to the Board of Management of Philips in 2006.*

*Philips Lighting is a leading provider of lighting solutions for homes and workplaces to public spaces, sports arenas and the outside lighting of architectural icons. In 2009, the company pledged to improve the efficiency of its overall product portfolio by 50 per cent by 2015 and double both its recycling rate and use of recycled materials in new products.*

*OSRAM was founded over 100 years ago and is headquartered in Munich. It focuses on high-tech efficiency and over 66 per cent of sales are generated from energy-efficient products. OSRAM’s work in helping families in developing countries switch to energy-saving lamps won approval as a UN Clean Development Mechanism (CDM) for its contribution to cutting CO<sub>2</sub> emissions.*

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