

Summary of the United Nations Environment Programme's Global Efficient Lighting Forum

Beijing, 11 November 2014

From November 10–11, 2014, the United Nations Environment Programme (UNEP) convened the Global Efficient Lighting Forum in Beijing. The Forum brought together governments, the private sector, financial institutions, civil society, and international agencies to reaffirm their commitment to implementing a rapid transition to energy efficient lighting, worldwide.

The United Nations Secretary General's Sustainable Energy for All (SE4ALL) initiative, has prioritised lighting as one of the Energy Efficiency Accelerators. Increased global action on efficient lighting constitutes a fundamental contribution to achieving the SE4ALL goals of doubling the global rate of improvement in energy efficiency and making sustainable energy for all a reality by 2030.

PARTICIPANTS, SPEAKERS AND RECOGNITION

The Forum was hosted by the Global Efficient Lighting Centre (GELC)-UNEP Collaborating Centre, with the support of the National Development and Reform Commission of China, the Ministry of Industry and Information Technology of China, the People's Government of Beijing Municipality, the Beijing Yiqing Holding Co. Ltd., the National Lighting Test Centre of China, the China Solid State Lighting Association, the China Association of Lighting Industry, and the China Illuminating Engineering Society.

The meeting was attended by government representatives of over 40 countries, as well as over 150 private sector, civil society and international organisations.

High-level speakers included: Ban Ki-moon, United Nations Secretary General, and Achim Steiner, United Nations Under-Secretary General and Executive Director, United Nations Environment Programme who addressed the Forum through a video-message, Kaveh Zahedi, Regional Director and Representative for Asia and the Pacific, United Nations Environment Programme, He Bingguang, Director General, Department of Resource Conservation and Environmental Protection, National Development and Reform Commission, China, Gao Yanmin, Deputy Director General, Department of Consumer Goods Industry, Ministry of Industry and Information Technology, China, and Benoit Lebot, Executive Director of the International Partnership for Energy Efficiency Cooperation.

UNEP recognised the outstanding leadership of select parties in accelerating the transition to efficient lighting including: six governments of Central America¹ through Proyecto Mesoamerica, with the support of Mexico and Colombia; the Government of Chile; the fifteen ECOWAS Member States and the ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE); the Kingdom of Jordan; the Government of Tunisia; and, the Government of Uruguay. The leadership of the Australian government's Department of Industry was also recognized for its commitment to promoting energy-efficient lighting technologies in the South-East Asia and Pacific regions, and, for being the first country to phase-out inefficient incandescent lamps through minimum energy performance standards. The Global Efficient Lighting Centre was recognised for its technical cooperation with regard to quality control for energy-efficient lighting. The global retailer IKEA received special recognition for its commitment to sell light emitting diode (LED) lighting exclusively in its stores worldwide by 2016. The Global Environment Facility (GEF) was also acknowledged for its outstanding role in financially supporting developing countries and emerging economies to transform their markets to more efficient products, through national, regional and global efforts.

¹ Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama and the Dominican Republic, with the support of Mexico and Colombia.

OPPORTUNITIES AND BENEFITS OF ADVANCED LIGHTING

The UNEP-GEF en.lighten initiative was established in 2010 and co-founded by leading global lighting industry partners, Philips and OSRAM, and then joined by the National Lighting Test Centre of China and the Department of Industry of Australia. Sixty-six countries have joined the en.lighten initiative's Global Efficient Lighting Partnership Programme and support the goal of establishing policies that effectively phase out inefficient incandescent lamps by the end of 2016.

The International Energy Agency considers energy efficiency as the new source of energy. Among the various energy efficiency measures, investing in efficient lighting instead of building new power plants is the cleanest, fastest, and most cost-effective way to reduce climate change.

UNEP estimates that replacing all the inefficient on-grid lighting globally with innovative, energy-efficient alternatives would result in over 1,000 terawatt hours (TWh) of electricity savings annually, which is equivalent to the annual electricity use of India and the United Kingdom combined. This electricity savings is equivalent to over \$120 billion in avoided electricity bills and the reduction of over 530 million tonnes of CO₂ annually.

LED lighting and digital control systems are revolutionizing lighting services by delivering improved levels of energy efficiency to all sectors. If a global transition to LEDs occurred, it would reduce electricity consumption by 1550 TWh worldwide, which is equal to the combined annual electricity consumption of Brazil, Germany and the United Kingdom. These savings could serve to electrify 1.5 billion households.

Speakers and participants also recognized the urgency of bringing modern lighting services to the 1.3 billion people in the world who presently lack access to electricity. A transition to efficient off-grid lighting would displace 90 million tonnes of CO₂ emissions each year while significantly improving the health and safety of end-users.

PUBLIC-PRIVATE PARTNERSHIPS ARE NECESSARY TO DEPLOY ADVANCED LIGHTING

Participants reaffirmed their determination to work together through public-private partnerships to accelerate the adoption of efficient on-grid and off-grid lighting worldwide.

The Forum delegates recognised that the UNEP-GEF en.lighten initiative has identified many tangible lighting efficiency opportunities in developing countries and emerging economies, especially in rapidly urbanising areas and in those not presently served by an electricity grid. These efforts need to be increased to avoid the rise in electricity consumption attributed to lighting.

Participants also encouraged the strengthening of international efforts to accelerate the transition to the most advanced lighting technologies in the commercial, industrial and outdoor lighting sectors.

The public and private sectors should engage in partnerships between lighting manufacturers and retailers to provide the best lighting technologies to end-users at affordable prices; and participate in open regulatory processes to create enabling policies for an accelerated transition.

Participants recognized the role of the private sector in helping to achieve universal access to modern efficient lighting technologies efficiently, effectively and sustainably. The public sector is encouraged to facilitate the removal of fiscal and trade barriers; collaborate with industry on

effective quality assurance; stimulate research and innovation; and increase awareness about market-based solutions for energy access.

The Global Off-Grid Lighting Association described how the private sector is helping to increase access to modern lighting and the ways in which industry can work with the public sector to ensure the sustainability of this growth.

Agreements, such as that signed at the Forum between the Technology Evaluation Alliance for Solid State Lighting and the Wi-Fi Alliance, represent promising moves to ensure global collaboration for the acceleration of smart lighting solutions.

Participants recommended that the UNEP-GEF en.lighten initiative identify additional targets to leapfrog to advanced lighting technologies, especially for professional, outdoor and off-grid applications. The initiative should continuously update and publish its *Country Lighting Assessments and Global Policy Map* and assist more countries to develop national and regional efficient lighting strategies, based on an integrated policy approach, leading to a permanent and sustainable market transformation.

FINANCING THE GLOBAL TRANSITION TO ADVANCED LIGHTING

To achieve the economic, social and environmental benefits of efficient lighting, financing is required to ensure a rapid and substantive transition in countries. Energy efficiency financing is the only energy investment where savings cover the investment. Additional savings can be used for other investments in sustainable development, education, healthcare, or for other development goals. International, national and local investors should be informed and convinced of these potential financial gains and the ensuing developmental progress. The benefits are great, the risks are low, and the returns are well-documented.

To scale-up and accelerate investments to increase access to efficient lighting, governments, private institutions and international bodies are employing financing tools and facilities including: the GEF, UN Framework Convention on Climate Change (UNFCCC) Nationally Appropriate Mitigation Actions; the NAMA Facility; the Green Climate Fund; energy service companies; revolving loan funds and multilateral bank loans.

Participants specifically recognised the important role of utilities in accelerating the use of efficient lighting solutions and in facilitating their customers' access to these products.

International financial institutions that support one-off lighting distribution programmes during energy crises to prevent black-outs, should work closely in conjunction with countries and international agencies to establish the enabling policies that will allow a permanent and definitive transition to advanced lighting.

Country examples:

India shared their experience in using an innovative financing model to accelerate consumer adoption of LED lighting. Energy Efficiency Services Limited is run by a publicly held energy services company (ESCO) that focuses on domestic and municipal lighting in the country.

A commercial bank, Kasikorn Bank from Thailand, presented an innovative financing instrument to finance energy efficient lighting projects in the commercial and industrial sectors. The bank offers green loans to small and medium enterprises and partners with ESCOs to provide loan guarantees.

POLICIES TO ENABLE THE ACCELERATION OF ADVANCED LIGHTING

Delegates and speakers provided tangible examples of how an integrated policy approach leads to sustainable market transformation for efficient lighting products and delivers optimal benefits.

Over 30 countries represented at the Forum have already, or are in the process of, adopting minimum energy performance standards to phase out inefficient incandescent lamps. Harmonising standards reduces costs and increases access to new technologies for emerging and developing markets. Representatives from West Africa and Central America described the consultative processes that led to the development of efficient lighting standards in these two regions. By coordinating regulatory measures for their respective markets, the countries will enjoy improved energy, economic and environmental benefits.

South-South cooperation to strengthen regional and national frameworks for monitoring, verification and enforcement, is seen as an important catalyst to deliver much needed technical capacities in developing countries, and should be increased.

Panellists presented their successes in implementing supporting policies, such as the U.S. Environmental Protection Agency's Energy Star® Program. In this case, the Federal government worked with individual states and industry to ensure the promotion and consumer acceptance of a national voluntary labeling scheme for efficient lighting products.

Participants also discussed how the market penetration of off-grid lighting can result in the same high rate of growth experienced by the mobile phone market in Africa. Awards and recognitions, such as the US Department of Energy's L-Prize, are seen as useful drivers to promote innovation and healthy competition.

LIGHTING THE WAY FORWARD

The Global Efficient Lighting Forum participants concluded that lighting has multiple human, social, economic, and environmental benefits. On-grid and off-grid advanced and efficient lighting increases the quality of life for communities and individuals; while helping to mitigate climate change, reducing energy dependency, avoiding new generation costs, and making economies smarter and more competitive.

The international community should work in a coordinated manner to promote the policies and actions that will accelerate the deployment of advanced lighting technologies. The UNEP-GEF en.lighten initiative has been identified as the leader to coordinate and promote this collaboration.

International agencies, multilateral development banks and donors should join these collaborative actions and increase their efforts to accelerate the wide deployment of on-grid and off-grid LED lamps and luminaires across all lighting applications.

Countries and regions who have not yet taken action, are encouraged to develop enabling policies to facilitate the accelerated deployment of advanced on-grid and off-grid lighting technologies including: minimum energy performance standards; and supporting policies, such as product labelling and public awareness campaigns. The private sector can be a valuable source of information and advice to countries when planning and implementing these programs.

To satisfy the needs and expectations of end users, and to ensure a level playing field, countries are encouraged to strengthen or develop their capacities for the monitoring, verification and enforcement of energy standards and the labeling of lighting products. Regional harmonised approaches to quality and performance control are desirable and more cost effective than uncoordinated national actions.

To guarantee an environmentally-friendly lighting market transformation, countries should develop or strengthen capacities for environmentally sound management of spent lighting products.

Civil society groups play an important role in lighting market transformation because they bring the voice of the consumer into the national and regional process.

The SE4ALL Lighting Accelerator should actively encourage countries and sub-national authorities including cities, states and regions, to join global efforts to deploy the most efficient lighting technologies and pave the way for the rapid global adoption of smart and efficient lighting by 2020.

UNEP, SE4ALL, and its international and private sector partners, are encouraged to disseminate the outcomes of this Global Efficient Lighting Forum to wider audiences to demonstrate the multiple benefits of leapfrogging to advanced lighting technologies and the substantive opportunities for climate change mitigation. Global action on advanced lighting will serve to inspire a positive outcome for the achievement of a universal climate change agreement at the UN Conference of the Parties in Paris in 2015.

SPECIAL APPRECIATION

On behalf of all participants, UNEP would like to express their gratitude to the Global Efficient Lighting Centre (GELC)-UNEP Collaborating Center for Efficient Lighting, with the support of the National Development and Reform Commission of China, the Ministry of Industry and Information Technology of China, the People's Government of Beijing Municipality the City of Beijing, the Beijing Yiqing Holding Co. Ltd., the National Lighting Test Centre of China, the China Solid State Lighting Association, the China Association of Lighting Industry, and the China Illuminating Engineering Society, for their effective organisation of this Forum and their warm and generous hospitality.