

Plea To Use Efficient Globes To Curb Spiralling Energy Demand

Changing to more efficient light globes at home and in the office could help reduce skyrocketing energy use which is set to be 80% higher in 2030 than it is today. That's according to International Energy Agency (IEA) Executive Director, Claude Mandil, who said better use of existing efficient lighting technologies had the potential to dramatically ease the pressure on future energy demand.

Launching a new publication, *Light's Labour's Lost: Policies for Energy-Efficient Lighting* recently, Mandil said it showed the potential for energy savings in lighting is simply enormous. "These savings can be achieved with technologies that not only are readily available in the market but economically-competitive during the life cycle of the product. Moreover, more efficient lighting also results in lower CO₂ emissions", Mandil said.

The comprehensive study is a component of the IEA's response to the July 2005 G8 Gleneagles Plan of Action which mandated the IEA to identify strategies and scenarios for a more sustainable energy future. It is the first detailed global analysis of the energy used by lighting and includes a thorough review of the technologies and policies which can reduce it.

"In the current lighting environment there are enormous sources of waste", Mandil said. "Light is routinely supplied to spaces where no one is present. Over-lighting occurs frequently and there are vast differences in the efficiency of competing lighting sources and in the way systems are designed to deliver light to where it is needed. While the problem is global, we have the means to address this waste now."

"When William Shakespeare wrote *Love's Labour's Lost*, he would have used light from tallow candles at a cost (today) of \$29,600 for a measure of light. The same amount of light from electric lamps now costs \$4.94, while the supply of artificial light in the country of Shakespeare's birth has increased 350,000 times", Mandil said.

"Generally, lighting ranks among the end-uses dominating global power demand. Worldwide, grid-based electric lighting consumes 19% of total global electricity production, slightly more electricity than used by the nations of OECD Europe for all purposes. Lighting requires as much electricity as is produced by all gas-fired generation and 15% more than produced by either hydro or nuclear power."

Mandil said the annual cost of this service including energy, lighting equipment and labour



Compact Fluorescent Lamps (CFLs) are becoming more popular to reduce energy emissions in households and offices. CFLs also last a lot longer than incandescent lamps, with lifetimes ranging from 6,000-15,000 hours, compared to around 1,000 hours for traditional incandescent lamps. One CFL alone will save around \$50 in electricity costs and 0.5 t of greenhouse gas emissions over its lifetime. That's the equivalent of taking a small car off the road for three months.

The greatest potential to reduce energy consumption from light globes is by using compact fluorescent lamps and T6 triphosphor or T5 linear fluorescent lamps, according to the International Energy Agency.

There are several other lamp types applicable to particular applications and other technologies, such as Light Emitting Diodes (LEDs) which will be a lamp option in the relatively near future.

Other technologies are as important as the lamp type however, such as efficient electronic ballasts for fluorescent lamps and the design of the luminaire - the light fitting itself - to reflect light efficiently.

Making better use of daylight in buildings is of course a means of reducing the need for artificial light altogether. ■

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is \$483 billion, which is roughly 1% of global GDP. "Electricity accounts for some two-thirds of this. But the electricity used by lighting is also a major source of CO₂ emissions, equivalent to 70% of those from the world's cars."

Light's Labour's Lost maps out the means by which lighting demand can be curbed at lower cost than continuing with current practices. It shows that were end-users to install only efficient lamps, ballasts and controls that will save money over the life cycle of the lighting service, global lighting electricity demand would drop substantially and be almost unchanged from 2005 levels by 2030.

"Following these measures would save more than 16 000 Mt of CO₂ emissions over the same time frame – equivalent to about 6 years of

current global car emissions – and would avoid \$3,492 billion in total expenditure on lighting through reduced energy and maintenance costs."

"Governments and the private sector must grasp the opportunity that energy efficient lighting offers if we are to attain the clean and competitive economy that we seek", Mandil said. "The policies which can bring about this transformation are known and proven but need to be implemented on an all together larger scale if the vast opportunities afforded by energy-efficient lighting are to be realised."

The book reviews the impact of lighting energy-efficiency policy actions to date and maps out the sets of measures which will be needed if an energy-efficient lighting future is to be reached. The book is available from www.iea.org ■