

Editorial

The Descent of Incandescence

The European Union (EU) phased out 100-watt incandescent light bulbs in 2009, and the 75-watt bulbs were recently banned in September 2010. A year from now, all incandescent light bulbs ranging from 25 to 60 watts will also no longer be available to the public in Europe. This policy decision to save energy from lighting generated a shopping frenzy at first by some who wanted to stockpile the old familiar – and comforting – incandescence. But by-and-large this was a major societal change. What else are the trade-offs besides nostalgia?

It is important to consider these potentially negative trade-offs as the United Nations Environment Program (UNEP) is now urging developing countries to also switch from incandescent light sources to “greener” alternatives including the light emitting diodes (LEDs) and fluorescent light sources. In a statement to coincide with the climate change summit being held in Cancun, Mexico in December 2010, UNEP’s executive director, Mr. Achim Steiner advised that Indonesia can avoid to build three and a half coal-fired power stations costing US\$2.5 billion if the country also adopts EU-style phase-out of incandescent bulbs. Savings in the United States could top US\$10 billion and prevent nearly 45 million metric tonnes of carbon dioxide emissions per year. And in China the savings will be about US\$5.5 billion. What about lighting resources in Africa? The range of light sources is very broad, from kerosene lanterns to battery powered lamps, petroleum burning generators, and where the supply of electricity is reliable, the incandescent bulbs probably predominate because of low cost of fixtures.

Although incandescent bulbs are greedy for energy and they do not last long, they have not provoked concerns about toxicity at the end of their useful lives. In contrast, fluorescent tubes and lamps are known to contain small amounts of mercury which are released to the environment when they break, and in most of Africa, they are destined to break at some point in places that are not equipped to manage the toxicity safely. Similarly, certain kinds of LEDs may contain toxic elements such as lead (Pb) and arsenic that will pollute the environment and cause adverse impacts on public health if they are not managed safely at the end of their useful lives.

The infrastructure to recover and recycle “greener” energy light sources to avoid environmental pollution by toxic constituents is still under development, even in affluent countries in Europe and the United States. It is important that, as UNEP is rightly advocating conservation of energy through the phasing out of incandescent bulbs and the phasing in of LEDs and fluorescent tubes, attention is paid to the necessary support system to prevent human health impacts through inadvertent toxic exposures. We do not want to trade one level of hazard for another more serious impact.