FAO: Panel on environmental affairs (26th March 2012)
- Proper Waste Management

The HK government and a number of LEGCO members on the environmental panel have been wrongly promoting CFL and LEDs as 'energy saving' and 'environmentally friendly'. These claims are simply wrong – and have created a health and environmental waste hazard.

Following on from the 2011 EU meeting on the impacts of 'energy saving bulbs', attended by leading medics and lighting experts (including 3 senior engineers from Philips) the toxic nature of 'energy saving bulbs' their harm to humans and the environment was finally admitted. Accordingly, I ask the HK government to ban all CFL and LED lighting from domestic use on the following grounds:

1. 'Energy saving' light bulbs harm humans – particular those in the waste industry.
2. 'Energy saving' light bulbs do not last as long as safe and healthy incandescent bulbs (now that the Philips/OSRAM/GE cartel has been abandoned) – result more waste is created by promoting 'energy saving' bulbs – and this waste is extremely dangerous.
3. Prior to recent calls to ban incandescent bulbs, Philips (a very politically active company) were able to operate a cartel that limited the life of all incandescent bulbs to one thousand hours – this created unnecessary waste in terms of production energy, and disposal waste – most incandescent bulbs prior to the cartel would comfortably last 5000+ hrs – many lasting 20,000 hrs+. The longest lasting light bulbs, according world records, are all incandescent. Now the cartel has been abandoned, incandescent bulbs, not made by the 'big three', last 20,000 hrs plus and cost one tenth of CFLs and use very little energy throughout their whole lifecycle.
4. Government is creating harm and cheating the taxpayer by using tax dollars to promote energy inefficient, harmful 'energy saving bulbs' that only increase the revenue to companies such as Philips.
5. Philips and OSRAM deliberately set standards to legally ban incandescent bulbs so that consumers would be forced to buy their more expensive CFL and LED bulbs – they sat on the EU committee designing lighting standards in order to ban their own incandescent bulbs and force people to buy their expensive 'energy savers' – Philips and OSRAM have been using their political muscle and connections to politically motivated 'green' groups to roll out a global programme forcing people to buy their highly toxic, poisonous 'energy savers' – 'energy saving bulbs' are all about money – they harm humans and the environment – AND SHOULD NOT BE PLACED IN LANDFILLS.
6. The Hong Kong government should take a lead and stand up to the politics being played out by Philips and their co-conspirator friends in self titled green groups – and ban CFL and LED bulbs.

If any member of the environmental panel genuinely believes the hype put out by the greens and Philips that CFL's and LEDs are not toxic, I invite each member to break 2 CFL and 2 LEDs – so they can experience the impact rubbish collectors on estates and at

waste sites experience when exposed to dozens broken CFL and LEDs bulb every day – thanks to government and LEGCO members promotion of 'energy savers' as 'environmentally' friendly. Their promotion has left many poorer less educated people thinking 'energy savers' they are safe and cuddly – cuddle a broken CFL and you run a real risk of developing cancer – see medical opinions below.

It is completely misleading for responsible bodies to state that CFLs only contain a small amount of mercury – the size of a ballpoint pen. Poison is rated by its toxicity and not size –the mercury in CFL is mercury vapour – highly toxic – deadly.

'Energy saving' bulbs are the asbestos of the 21st Century. Just using an 'energy saving bulb' can make you feel tired, cause eye strain, headaches, skin rashes and even skin cancer. If you are exposed to a broken 'energy saving bulb', you run the risk of developing long term cancer of the liver, kidneys and brain. Believing the claim that 'energy saving bulbs' are safe, and save energy, is a bit like believing Blair's claim that Saddam Hussein had weapons of mass destruction.

Hong Kong politicians are here to SERVE and PROTECT the pubic – and not to promote the products of Philips and OSRAM with tax payer dollars – products that cause serious harm to the people politicians are supposed to be protecting. Politicians should wake up and do their job rather than caving in to powerful lobbyists and threatening green groups sponsored by lobbyists and the EU.

In discouraging the incandescent bulb, big government has broken new ground; for the first time big government has actually discouraged a safe product and promoted to its people an unsafe product. Even more concerning, is that big governments are fully aware of the serious health risks associated with 'energy savers'. There is also plenty of research to show that when all costs of manufacture and disposal are taken into account, energy saving bulbs do not even save energy and should be aptly named 'energy wasting bulbs.'

Toxic mercury Compact Florescent Lights (CFLs) and toxic lead and arsenic Light Emitting Diodes (LEDs), are referred to as 'energy saving' or 'green' bulbs by a lazy media and politicians desperate to appear green. However, this 'energy saving' claim is based on the false assumption that all light bulbs produce and distribute the same type of light (they don't), that 'energy savers' last their claimed life span (they don't), and conveniently ignores the huge costs of mining and manufacturing of lead, mercury, and arsenic along with a whole cocktail of other harmful toxins required to make 'energy savers' work. It also ignores the energy and resources required to make the thirty plus electronic components 'energy savers' contain.

Claims that 'energy savers' are good for the environment dodge around the fact that 'energy saving bulbs' unlike incandescent bulbs, are classified as **hazardous waste** which is disguised by their label 'recyclable'. **Used energy savers should not be put in your dustbin. Rather, used energy savers need to be carefully packed, to ensure they don't break, and then taken to specialist hazardous waste recycling sites –**

failure to do this will result in mercury vapour spewing in to the lungs of any unfortunate persons coming into contact with your broken 'energy saver.'

Likewise if an 'energy saver' breaks in your home you are recommended to open all windows (tough if you work in one of those offices with sealed windows – lawyers must be rubbing their hands at the thought of how much money they can make out of this situation – given that most HK buildings have sealed windows and air conditioners), evacuate the room, and throw away all clothing, carpets and bedding etc. exposed to mercury vapour from the bulb. Such details have been deliberately left off the packaging of these toxic bulbs – yet governments feel the need to label cigarette packets containing cigarettes which do a lot less harm than the mercury, lead and arsenic poisoning that you are at risk from with 'energy saving bulbs.'

Differences in light spectrum, radiation and spread of light are similarly absent from information contained on the packaging – because incandescent bulbs outperform 'energy savers' at every level of safety and quality. **Traditional incandescent bulbs are not toxic and as such can be disposed of in your dustbin without harming anyone.** Similarly if you, or your child, break an incandescent bulb the only harm likely to be suffered is a possible cut – much less harm than a possible cut and cancer from a broken 'energy saver'.

Cancer causing energy saving bulbs

All 'energy saving' lighting, LED and CFL, harm humans in two ways. First, harm arising from just being close to them; this harm ranges from just feeling lethargic, to skin cancer. Second, harm from the toxins released when they break exposes people to a risk of a number of cancers in the long term – if you have any doubts about this, ask your Philips sales representative or Green Peace campaigner to break a couple of high priced 'energy savers' and breathe deeply.

Not all light is the same. Incandescent bulbs produce healthy light; they mimic the spectrum of natural light, they don't flicker the same as 'energy savers', don't produce harmful radiation, and don't contain harmful toxins. In contrast, 'energy saving bulbs' contain a cocktail of toxins, produce harmful radiation, produce a lumpy light spectrum, and imperceptibly flicker.

Poisons from energy saving bulbs – what medical experts say

There is a real risk of skin cancer from the radiation CFLs produce. Dr Colin Holden, President of the British Association of Dermatologists explains this risk as follows, '*It is important that patients with photosensitive skin eruptions are allowed to use lights that don't exacerbate their condition. Photosensitive eruptions range from disabling eczema-like reactions, to light sensitivities that can lead to skin cancer.'*

In 2011 Andreas Kirchner, Environmental spokesman of the Federation of German Engineers, re-emphasized the mercury problems of CFLs and the electromagnetic radiation they produce; '*Electrical smog develops around these lamps. They should not be used in unventilated areas and definitely not in the proximity of the head.'* Yet, even schools are using 'energy savers' in study lamps that are placed close to a child's head.

Magda Havas, Associate Professor at Trent University, Canada, similarly warns of the dangers of Electromagnetic Field (EMF) radiation from CFLs, '*CFL's produce a frequency range known to produce adverse effects on one's health. Teachers who taught in classrooms [with such lighting] had a 5-fold increase risk of cancer (risk ratio 5.1) that was statistically significant.....studies with diabetics and people who have multiple sclerosis found that when [such radiation] is reduced their symptoms diminish.'*

Dr. David Carpenter believes it is likely that up to 30% of all childhood cancers come from exposure to EMFs. Professor Anthony Pinching, Associate Dean and Professor of Clinical Immunology at Peninsula College of Medicine & Dentistry, is aware of the consistency with which a proportion of CFS/ME patients report adverse experiences in settings lit with fluorescent lights. '*fluorescent tubes have been most likely to cause problems. Note that we are not talking about defective fluorescent tubes, but about a problem resulting from the characteristics of the light emitted when they are functioning as intended.'*

Dr R. Sarkaney, FRCP MD St Thomas' Hospital, London, believes that the reasons behind people feeling ill under CFL lighting are in part due to the ultraviolet light they emit and also because, *'there are other differences between incandescent and fluorescent lights such as the 'spikiness' of the spectrum of emitted light. Thus, it is likely that , whatever UV protection is put into place with fluorescent lights, there will always be a group of patients who react to the fluorescent light and can only tolerate incandescent lights.'*

Owen Z. Perlman, M.D., is confident that, *'there are more people impacted by exposure to CFLs than are in wheelchairs'*. Dr. John Hawk, from the St John's Institute of Dermatology, London, has similarly observed, *'a significant number of people with certain skin disorders such as seborrhoeic eczema and lupus cannot tolerate any form of fluorescent lighting in their vicinity. [Such people] can only tolerate incandescent lighting from tungsten filament bulbs.'*

Dr Hawk was the SPECTRUM observer at the SCENIHR meeting on Compact Fluorescent Lamps, European Commission, Brussels, in October 2011. After the meeting, Dr Hawk wrote, *'It seemed to me that the SCEINHR committee, the UK representatives and I were all of similar mind concerning the potentially adverse effects of the lamps. The lighting representatives (three lighting experts from Philips) tried to modify the overall opinion slightly towards suggesting less harm but were not hugely adamant. The overall feeling of the meeting was that the lamps had a number of potentially adverse effects, mostly for abnormally photosensitive subjects but also somewhat for normal ones, on both skin and eye. …. SCENIHR committee members also suggested that the incandescent lamps may not be particularly more wasteful of energy than the new CFLs.'*

Toxic LEDs

The diodes are widely hailed as safer than CFLs. But, as Oladele Ogunseitan, Chair of University of California (UC) Irvine's Department of Population Health & Disease Prevention said, *'they weren't properly tested for potential environmental health impacts before being marketed.'* The 2011 University of California (UC) found that that LED

bulbs contain lead, nickel, arsenic, and a dozen more potentially hazardous substances, raising wide-ranging health and environmental issues.

The UC study went on to warn consumers of the potential harm from contaminants found in LED bulbs: Toxins like lead and arsenic are linked to various cancers, brain damage, hypertension, skin rashes, and other illnesses. The copper in LED bulbs, once released, can affect rivers, lakes, and infect fish. If a bulb was to break, and somebody breathed in the fumes released, it could act as a tipping point on top of exposures to other carcinogens. Plus, because lead tastes sweet, it is possible that children may mistake small ornamental LED lights as candy.

Poisons released from broken 'energy efficient bulbs'
Traditional incandescent bulbs are simple and safe. The tungsten they use does not harm humans and the effects of tungsten on the environment are limited. You can sit close to one and suffer no harm, break one and you are not exposed to any poisonous toxins. In contrast, both LED and CFL lighting contain harmful toxins. If you have read the EPA instructions on what to do if a CFL breaks, who would want to eat in a restaurant in which a CFL was broken? How about working in an office with sealed windows (which cannot be opened to 'air out' the Hg vapors)? Would you like to work in a factory making 'energy saving bulbs'? Are you foolish enough to use them in your home, particularly in your kid's bedroom?

It is simply wrong when green groups and big government assert that because CFLs only contain a small quantity of mercury a broken CFL cannot harm you. When a CFL is broken, mercury is released in its most toxic and deadly form - as an odourless vapour (very different than mercury in your fillings and thermometers). It also means that you do not immediately realise that you have been poisoned. Rather, mercury accumulates in the body and attacks the vital organs – the brain, liver and kidneys – over a long and prolonged period of time. The following are extracts from the U.S. Environmental Protection Agency issued in June 2010;

'Before Cleanup: Air out the room. Have people and pets leave the room, and don't let anyone walk through the breakage area on their way out. Open a window and leave the room for 15 minutes or more. Shut off the central forced air heating/air conditioning system, if you have one. Do not use a vacuum or broom to clean up the broken bulb on hard surfaces. If clothing or bedding materials come in direct contact with broken glass or mercury containing powder from inside the bulb that may stick to the fabric, the clothing or bedding should be thrown away. Do not wash such clothing or bedding because mercury fragments in the clothing may contaminate the machine and/or pollute sewage.'

Yet despite these guidelines, bulb companies are still putting out adverts telling you that CFL's only contain a small amount of mercury, or try to mislead you into thinking that their CFL does not contain mercury. Such claims need careful examination. All CFLs, whatever the label says, contain toxic mercury. As Professor Ron Hui points out, *'The danger of mercury is measured by its toxicity. Each CFL is a toxic chemical hazard with*

toxicity thousands times higher than the safety limit. Most of the electronic components and toxic chemicals such as carcinogenic flame-retardant coatings PBDE cannot be recycled.'

Similarly Maine DEP tests found that from just one broken CFL, '*Mercury concentration in the study room air often exceeds the Maine Ambient Air Guideline has particular significance for children rolling around on a floor, babies crawling, or non mobile infants placed on the floor.'*

If advertisements for bulb companies are telling you their 'energy saving' bulbs are safe, why the need to issue these guidelines? The answer of course is that 'energy saving' bulbs are not safe - and the bulb companies know it. Governments across the globe committed to banning incandescent bulbs without doing their homework; so they now have to talk out of both sides of their mouths – one side telling you they are safe, and the other side issuing safety warnings in the form of clear up and disposal instructions. Big government is also wary of the power of heavily funded green groups supporting the ban on incandescent bulbs and is scared of anarchistic behaviour they are capable of – it is so much easier to bully the elderly and weak who are not capable of staging elaborate protests or riots.

'Energy saving bulbs' poison workers

When I wrote to then Britain's Energy Minister, Dan Norris, regarding the inevitable exposure workers will have to face in the production of 'energy saving' bulbs, and the environmental hazards created upon disposal, Norris's reply, littered with 'hopes' and 'shoulds', made it clear that he was aware that workers were being poisoned in China and that these bulbs were a serious environmental problem. Yet despite this awareness, the British government continues to promote these bulbs and in the next breath criticizes China's human rights record. The following is an extract from what the Sunday Times had to say:

'In China, however, a heavy environmental price is being paid for the production of "green" lightbulbs.. Large numbers of Chinese workers have been poisoned by mercury, which forms part of the compact fluorescent lightbulbs. … A surge in foreign demand, set off by a European Union directive making these bulbs compulsory. Doctors, regulators, lawyers and courts in China - which supplies two thirds of the compact fluorescent bulbs sold in Britain – are increasingly alert to the potential impacts on public health of an industry that promotes itself as a friend of the earth but depends on highly toxic mercury. Making the bulbs requires workers to handle mercury in either solid or liquid form because a small amount of the metal is put into each bulb to start the chemical reaction that creates light.

Mercury is recognised as a health hazard by authorities world wide because its accumulation in the body can damage the nervous system, lungs and kidneys, posing a particular threat to babies in the womb and young children … mercury poisoning in lighting factories is a growing public health concern. Doctors at two regional health centres said they had received patients in the past from the Foshan factory of Osram, a big manufacturer serving the British market.'

In addition to being fully aware that the bulbs they promote are poisoning Chinese workers, **the British Government is also aware that over two million people are ill under energy saving bulbs, particularly the elderly and sick. Hong Kong should expect similar problems if it continues to copy EU policies that people of the individual EU nations do not want.**

Energy saving lamps are energy wasting lamps and should be discouraged from use. Incandescent bulbs are safe, produce high quality light and use very few resources to make – just pull one apart yourself and see. In contrast to incandescent lamps, **'energy saving bulbs' contain a complex mixture of substances which are indispensable for the production of light: Phosphor compounds, zinc beryllium silicates, cadmium bromides, vanadium compounds, rare earths (europium, terbium, etc.), lead and arsenic. Sourcing these elements and chemically processing them requires substantial technical facilities and corresponding energy consumption. Producing compact fluorescent lamps, with all pre-fabrication steps for the control gears taken into consideration require considerably more energy to produce than a simple safe incandescent bulb.**

LEDs are even more complex than CFLs, since they must include conversion to DC (direct current), and additionally a heat sink system since, as with CFLs and unlike with incandescent bulbs, the heat is internalized rather than radiated externally, and adversely affects performance and lifespan.

Energy saving bulbs do not distribute their light in the same way as a standard incandescent bulbs, resulting in the reading surface appearing effectively dimmer than an incandescent with the same lumens. To produce the same effective light as an incandescent bulb, 'energy saving' bulbs need to generate about a third more lumens and thus use a third more energy. This is why, Dr Klaus Stanjek, after carrying out a detailed investigation into the resource implications of 'energy saving' bulbs concluded that, '*Energy saving lamps are energy wasting lamps and should be discouraged from use.'*

Claims that 'energy saving' bulbs last longer than incandescent bulbs are not true. The lifespan of a CFL bulb has been artificially measured under laboratory conditions. Studies have shown that in the real world, the lifespan of a CFL can be shortened by a massive 85% under normal domestic household use conditions. In other words, if the bulb lab lifespan was 6,000 hours (five years) it would give you only 12 months or so of light before dying unceremoniously.

Incandescent bulbs were artificially limited to a mere 1000 hours under the Phoebus Cartel. Now that Philips, Osram et al have abandoned this cartel, incandescent bulbs are lasting up to a massive 20,000 hours – much longer than any 'energy saving bulb.'

'Energy saving bulbs' poison the environment
Practically, there is no way to prevent people disposing of used CFL and LEDs with their other garbage. This leaves garbage collectors and anyone collecting or

handling rubbish vulnerable to lead, mercury and arsenic poisoning. Mercury vapor can be emitted for weeks after a single bulb is broken. Young children and the elderly who drop rubbish into a bin containing a broken CFL risk serious long term health problems.

The EU in its promotion of CFL and LEDs refers to them as needing to be taken to special collection points for 'recycling' under Waste Electrical and Electronic Equipment Directive (WEEE). However, they are not actually fully recycled and used again. Rather they are classified as hazardous waste and require special energy intensive procedures to make them safe – 'recycling' sounds so much nicer! **However, it is not just about taking 'energy saving bulbs' to special hazardous waste sites; before embarking on the journey, they need to be specially packaged so as to avoid breakage or leakage - they should not be just placed in any old bag or box – current carboard boxes supplied by the EPD are wholly unsuitable and leave workers exposed to mercury poisoning.**

Across the EU and America, which are supposed to have high standards, most CFL and LED bulbs are just thrown in the bin where they end up in landfills where they pose major environmental risks. **Landfills become waste sites of major toxicity and ultimately leak these deadly poisons into the water stream and food chain, thus creating long term health problems. As Professor Hui points out, 'Government departments like the U.S. Environmental Protection Agency have misleading arguments, like landfills are OK. In many countries, like Hong Kong, the garbage truck will compress the garbage [en route to the landfill]. The lamps will be broken which means the mercury will be transferred all over the city. The Hong Kong government told us that the landfill can handle mercury. I told them the mercury vapor will escape before it gets there. Even if they can safely transport the CFLs [to the landfill], the safety layer has a lifespan of about 100 years. So you are building a time bomb for future generation.'**

To put add some numbers to what Hui is saying, based upon the Canadian Water Quality Guideline (CWQG) to protect freshwater life, one 'energy saving' light bulb could contaminate 190,000 liters (50,193 U.S. gallons) of water to levels that exceed Canadian Water Quality Guidelines. In Sweden which has and established and well organised recycling practices and prides itself on being informed and spearheading environmental awareness, people are disposing of their Mercury CFL and arsenic LEDs in glass recycling bins, thus contaminating all the other glass for recycling.

Accordingly all CFL and LED lights should be banned with immediate effect to prevent a serious health and environmental problems – the government and lazy politicians craving for green credentials should stop pandering to EU funded green groups in Hong Kong and stop copying EU legislation aimed at transferring the HK rule of law to the EU.

I invite all sitting members of the panel on the 26th to walk their talk – as members of that panel have promoted CFLs I invite you to break 2 CFL and 2 LEDs in front of the press. If you are too scared, you need to look closely in the mirror and ask yourself why you have been promoting these bulbs into peoples' homes and in so doing have left the most

vulnerable and least educated members of society open to toxic poisoning from the very bulb you are promoting – whilst the bulb you discourage (incandescent) is perfectly safe, lasts longer, costs less and uses less energy over its whole lifecycle – the only beneficiaries of your actions are companies such Philps and OSRAM

Other points:

1. There should be no charge at the point of disposal for waste – such charges encourage dumping – any charge should be at the point of sale when the product is new.
2. The plastic bag levy should be lifted – too many poor people are carrying fresh cold milk and even meat without a carrier bag –result – products wasted. At the same time so called environmentally fashion brands (used by multi-millionaires) give their customer paper bags containing highly toxic colourings – yet escape tax and place large colourful adverts in the SCMP (a paper that claims to be anti-carbon). Plastic bags are useful to carry products home. The same bags can then be used as bin liners – the same cannot be said of fashion bags.
3. Review of packaging – function of packaging (including plastic bags) is to get the product safely and without harm to the final user – need to remove excess packaging and grouping of plastic bottles with thick destructive plastic – why should Taste in conjunction with Dettol body wash be allowed to wrap in this way – generating real waste - yet carrier bags face a levy and such packaging does not – it is nothing short of 'Tony Blair/ Chris Patten/EU' symbolism politics to tax plastic bags and tolerate this type of unnecessary packaging.
4. Promote solid blocks of soap wrapped in paper – better than plastic bottles of soap.
5. Ban small plastic bags for small dry products and replace with paper ones.

Additional note

All government members and LEGCO members that believe in the global warming lie (worth trillions per year to bankers) and that C02 and carbon are bad should lead by example by:

1. Abandoning their cars – Hong Kong has an excellent public transport system – use it and relate to people on a daily basis.
2. Stop sending their kids overseas – one return economy class to London generates C02 emissions of the average Hong Konger for one year.
3. Switch off all air conditioning units in government buildings.
4. Stop funding and attending global warming conferences (the world has been cooling for the last 15 years).
5. Only grant planning permission for buildings with enough natural light to light the building between the hours of 9.00 to 4.00pm all year round – this is very feasible – just rip up the building codes and give design work to old school architects rather than those promoted by the self-serving image conscious Patten/ Blairite EU hypocritical generation.
6. In accordance with 5. above – rip up the BREEAM codes and current regulations and start building buildings that work with the environment rather than against it – the new LEGCO building is an environmental disaster – and demonstrates the worst in green buildings and the money driven green agenda – symbolism and

ticking boxes (eg poisonous bulbs – and BREEAM gives you a tick in your box and a few points) but no substance – just toxins and harm.

7. Once you get designs for buildings, products and services back to basics, waste problems will be solved in a genuine and sustainable way – to achieve this, stop listening to established green groups and their backers, stop being lazy politicians and do your own research, start to study the environment rather than going for quick fix false solutions such as promoting cancer light bulbs that will generate waste problems for generations to come yet provide huge revenue increases to companies like Philips and carbon traders that are 'milking' green lies for their own benefits. Above all, as leaders you must live by what you preach – it is not acceptable to say C02 is bad and then drive home by car to an air conditioned home.

It is high time that the HK government and its members start to walk their talk or stand up for scientific truths – only then will waste problems be really solved.
Dr Robert Hanson