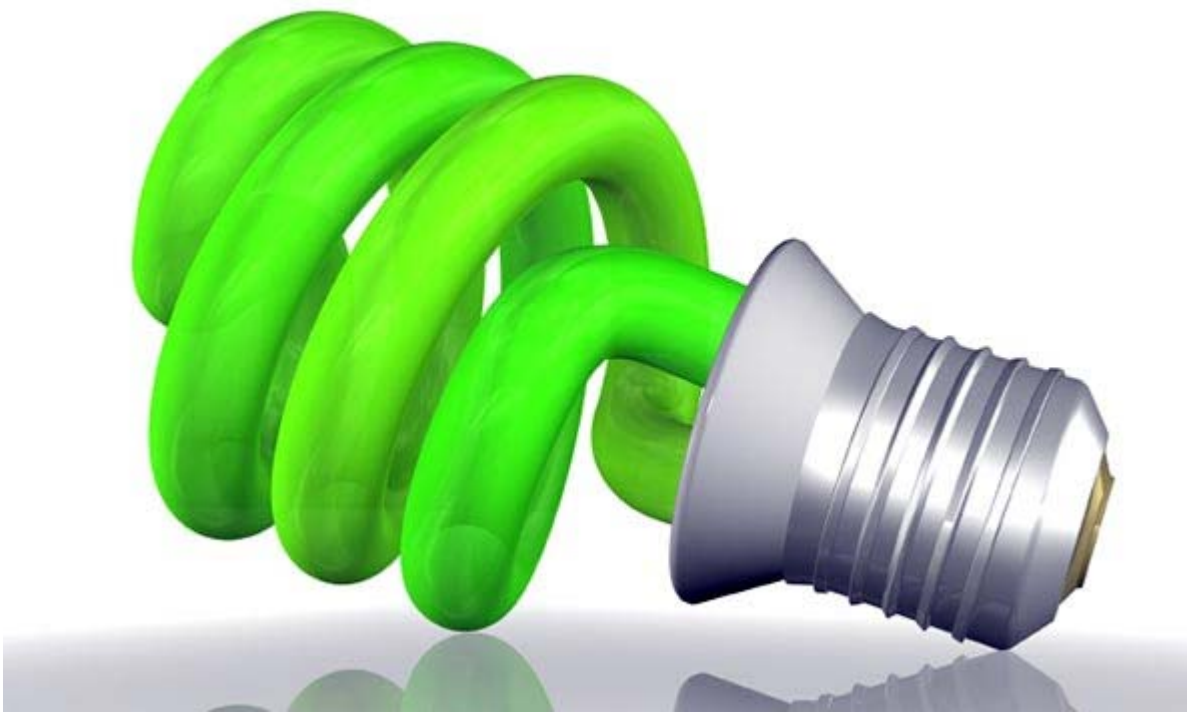
The Dark Side Of CFLs

WEDNESDAY, 15 APRIL 2009 WALT MCGINNIS



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Consider this - instead of saving the environment, CFLs are actually destroying it. CFLs should be thought of as toxic technology, when mercury contamination, ultraviolet radiation, and radio frequency radiation are factored in. From cradle to grave, CFLs pose a danger to people's health and well being, as well as adding even more toxicity to the environment. In fact, CFLs do not reduce a person's carbon footprint and may even increase it in some situations. To make matters even worse, CFLs emit harmful levels of electromagnetic radiation.

Starting in the year 2012, regular incandescent bulbs, the ones invented by Thomas Edison over 100 years ago, will be banned in Canada in the pursuit of reducing greenhouse gas (GHG) emissions. Yet, contrary to popular belief, switching from regular bulbs to CFLs could increase global energy consumption, not reduce it. If that alone does not shake consumer confidence, perhaps the facts that CFLs contain mercury and also emit electromagnetic radiation might give people a wake-up call up to the truth about CFLs.

On the other hand, since CFL producers are being handed a monopoly in the light bulb market by some federal government and are being cheered on by corporatist environmental groups, sales are not about to drop anytime soon.

It seems like the protectors of the environment have jumped ship. *Health Canada* is simply not doing its job as they ignore the devastating impact of having millions of CFLs in our environment. Why are they sitting by, and allowing the Canadian government to force its citizens to use them?

To make matters even worse, groups such as the *Suzuki Foundation* and *Greenpeace*, whom Canadians have come to rely on to protect them from environmental pollutants, have chosen to ignore the potential looming environmental and health risks, and blindly promote the use of CFLs.

Why have environmentalists and the government joined in an alliance with the electrical industry in promoting an undeniably dangerous product? Whose side are they on anyway?

Canadian Health and Safety officials seem to be asleep at the switch, oblivious of the hazards, and environmentalists appear to have sold out, as manufacturers and sellers of CFLs are laughing all the way to the bank. With impunity "los tres amigos", the manufacturers, the corporatist environmentalist backers and government, are leaving misled consumers to deal with the aftermath of a potential environmental catastrophe.

Meanwhile, the New Zealand government, citing concerns about CFLs lack of efficiency and safety, has lifted its ban on incandescent bulbs. Hopefully other governments will see the wisdom in this decision and follow suit.

Corporatist Environmentalists

Corporatism is the dominant ideology in today's western democracies. "While the corporatist society maintains a veneer of open criticism and democracy, it squelches opposition to dominant corporate interests by using propaganda and rhetoric to obscure facts and to deter communication among citizens. Corporatism creates conformists who behave like cogs in organizational hierarchies, not responsible citizens," explains *Publishers Weekly*, reviewing the book *Voltaire's Bastards* by John Ralston Saul. These are just some of the attributes of the ideology that has a strangle hold on our society and, it appears, on our major environmental groups as well.

The environment is too important to be left solely to the environmentalists.

Environmentalists with corporatist tendencies can cause a lot of harm when they are not properly scrutinized and held accountable by the public. They have played a huge role in keeping consumers in the dark regarding the hazards posed by CFLs. The *Suzuki Foundation* and *Greenpeace* claim that CFLs are good for the environment and no one dares to challenge them.

The disinformation process begins when public awareness of a harmful product, such as a CFL, is restricted by environmental groups. Over time, with no real criticism of the product, a consensus consciousness is created in the public mind that the product is safe. Finally, in one of the oldest tricks in the book, corporations use these groups as third party endorsers to create a favourable image of a potentially dangerous product. Remember back in the sixties with doctors in TV adds smoking *Camel* cigarettes?

The evidence that shows that CFLs are hazardous to humans is undeniable. The question is, why are environmental groups willing to risk a safe environment and their reputations by promoting a toxic product?

CFLs Are A Hazardous Product & Do Not Save Energy

It may surprise many people to know that CFLs increase a consumer's carbon footprint in a 'cradle to grave' analysis. Full costs to manufacture, operate and safely dispose of a CFL have never been disclosed to the public. The reality is that residential lighting takes up only 0.8% of energy consumption in Canada.

CFLs are energy hogs to produce, operate and dispose of. Reducing a consumer's carbon footprint is the CFL's raison d'être. But before deciding to switch over to compact florescent lights it would be wise to first review a cradle to grave analysis of the carbon footprint of a CFL, compared to an incandescent bulb.

What is the real energy cost of a CFL? What does it cost to mine, manufacture, package, ship, sell, operate, dispose of CFLs on the environment? These are questions ignored by CFL promoters.

An *International Association for Energy-Efficient Lighting (IAEEL)* study conducted in Denmark, explored some carbon footprint factors, but not all, showing it took 1.8 Kwh of electricity to assemble a CFL compared to 0.11 Kwh to assemble an incandescent bulb. That means it took 16 times more energy to produce a CFL. The study did not include the fact that a CFL is much heavier and is more dangerous to handle, and will thus cost more to package, to ship, and to sell.

This research also did not calculate the energy required to safely dispose of a CFL and reclaim the mercury. The cost of removing mercury from the landfills was also not considered. More over, the potential cost in destroyed lives, illnesses, and lost human productivity due to exposure to mercury and electromagnetic radiation have not been considered.

If such a study could be done, and considered all the negative contributing factors, it would show a CFL has a massive carbon footprint, one that would dwarf a regular incandescent light bulb and it would also show that CFLs will leave behind a wake of environmental destruction.

CFLs Do Not Save On Energy Consumption

Power Factor

An incandescent bulb has a power factor of 1. Most CFLs sold in Canada have a power factor of about 0.55. That means there are about 45% more energy losses in operating the CFL compared to an incandescent bulb. This does not show up on a power bill but the power company has to supply about 45% more power than what the bulb is rated for. Astonishingly, CFLs can take almost twice as much energy to operate than what is on the label and still be listed as an energy star product, something few consumers know. CFL cheerleaders seldom tell consumers that the power factor is not included in their energy consumption calculations.

Heat Loss

Energy efficient bulbs increase greenhouse gases. Because they burn cooler, they cause home heating costs to rise. "Lighting regulations (banning incandescent lights) will increase GHG emissions in *Hydro*'s service territory by 45,000 tons due to cross effects of a switch to cool-burning bulbs," explained a BC Hydro spokesperson in 2009 *Vancouver Sun* article.

The 'cross effect' referred to is the loss of heat from hotter incandescent bulbs when we switch over to cooler burning CFLs. When a 60watt regular bulb is replaced with a 15 watt CFL, 45watts of heat from inside a house is lost. If that is repeated 20 times, 900watts of lost heat now has to be provided for from another source.

To make up for the lost heat consumers have to turn up electric heating, or worse still, turning up their oil or gas furnace which will leave them consuming even more energy and creating more greenhouse gases than before they made the switch. In the summertime, because of longer natural daytime light, both lighting and heating are used much less. In the wintertime power consumption will rise as lights go on but additional substitution heat is required to compensate for less heat from the CFLs.

Considering the lower power factor as well as the heating losses, it can be concluded that using CFL will not reduce a consumer's carbon footprint when compared to a regular light bulb. Moreover, instead of saving energy there is good evidence demonstrating that using CFLs will increase the user's carbon footprint.

CFLs Are Power Dumb

Lighting is a fraction of overall energy consumption and has a limited potential for energy savings. Nevertheless, North Americans should be conserving wherever possible. At the same time, people should not forget that switching incandescent bulbs to CFLs poses a whole range of negative environmental and health impacts with very little, if any, energy savings

> *An electric hot water tank consumes five times as much electricity as residential lighting.*

To put lighting energy consumption into perspective, the *Sector Sustainability Table* listed in the *Government of Canada* website reports that "Homes consume 16% of all the energy used in Canada, with lighting using 5% of that figure. Residential lighting therefore represents 0.8% of the total energy consumption in Canada. This means that Canadians are spending millions of dollars on CFLs in a fruitless effort to reduce a fraction of their energy consumption."

It would be much 'power smarter' to focus on residential water heating than light bulbs. An electric hot water tank consumes five times as much electricity as residential lighting. If hot water heating was made 10% more efficient by using inexpensive technology already available, Canadians would save more energy than the most wildly optimistic

predictions of savings by CFL promoters. It would be cheaper, simpler, and have no detrimental environmental effects.

CFLs Are Mercury Polluters

More than 98% of used CFLs end up in landfills each year. That is 675 million for the year 2007 according to the *National Geographic Society.* Each CFL contains about 5 milligrams of elemental mercury as well as other poisonous gases. When mercury enters water sources, biological processes change the chemical form to methylmercury which is the organic, more toxic form found in fish. Methylmercury bio-accumulates through the food chain and once in the body can affect developing fetuses, children and adult nervous systems.

> *Methylmercury will not stay in landfills as it easily gets transported through the water table. Throwing CFLs into landfills will contaminate the soil, the water table and eventually the air.*

More than 60,000 children are born each year in the United States with neurodevelopment impairments caused by exposure in the womb to methylmercury compounds, according to new estimates by an expert panel convened by the National Academy of Science's Year 2000.

Beware of a broken CFL, as each broken lamp should be considered similar to a toxic spill and care needs to be taken cleaning them up. The manufacturing of CFLs also exposes workers to toxic levels of mercury. CFLs are manufactured mostly in China with virtually no health, safety, or environmental protection regulations. Ironically, most of the electricity used to manufacture CFLs comes from coal-fired generators. As CFLs increase in popularity, mercury exposure to workers, to electricians, to maintenance personal, to consumers, to water supplies, and to the living environment, will go ahead almost unchecked.

> *How many resources and pollutants does it take to make a light bulb?*

"The reality is, even energy-efficient products don't always come from energy-efficient beginnings. Consider for a second what goes into producing, powering and transporting products around the world like...energy efficient light bulbs. Until they are manufactured in a carbon-neutral way, transported on low-emission vehicles and powered in our homes by cleaner energy—green products will never be as green as they can be," explained the *World Wild Life Fund* in *MacLean's Magazine*.

Many environmentalists ignore these facts and instead claim that CFLs put less mercury into the environment than what would have been created via a smoke stack to generate the additional electricity needed for regular light bulbs. This is not true. Not all electricity is generated by dirty coal-fired plants. Even if it was, this would still be an irrelevant point given that coal fired power plants could operate with 80% less mercury emissions. In any event, it does not apply to BC where 90% of electrical power comes from hydroelectric dams according to *BC Hydro*. In Canada, 58% of electrical generation is from hydro and 19% from coal, according to *Industry Canada*.

CFLs Are Electro-Polluters

CFLs emit electromagnetic radiation, a type of energy that can make people very sick. Many people have reported skin rashes and irritation due to ultra-violet (UV) radiation. Radio frequency radiation is even more of a concern. The effects of exposure to radio frequency radiation, as well as to high voltage spikes and transients, are known to cause illness, are virtually ignored by environmental groups and green building consultants alike.

> *There has been a 'rash' of health problems associated with exposure to electromagnetic radiation such as that emitted by CFLs.*

In Sweden, according to polls, up to 290,000 people, or more than 3% of the population, have reported suffering symptoms of EHS when exposed to electromagnetic radiation. Symptoms range from joint stiffness, chronic fatigue, headaches, tinnitus, respiratory, gastric, skin, sleep and memory problems, depressive tendencies, to Alzheimer's disease and all classes of cancer.

Hope For The Future

Other than the *World Wildlife Fund,* almost all the major environmental groups have not informed the public about the dark side of CFLs. Why they behave as they do is unknown but promoting CFLs could potentially diminish these groups credibility when the facts become apparent.

Hopefully, other governments will wake up to the shortcomings of CFLs, and follow the New Zealand government's example and change their policies on banning incandescent lights due to concerns about safety and energy efficiency of the CFLs. Germany has already restricted the use of fluorescent lighting in public places and has banned fluorescent lights in hospitals perhaps showing that this issue is too great to be shrugged off and ignored. North America appears to be headed in the opposite direction and the Canadian Federal government still plans to ban all incandescent lights before year 2012.

There are incandescent light bulbs on the market right now that last longer than CFLs and are 80% more efficient than a regular bulb. In 2010, surprisingly, just as the market gets saturated with CFLs, *General Electric* is coming out with a new high efficiency incandescent bulb. They claim it will be twice as efficient as a regular bulb.

If they live up to their claims these new incandescent lights will rival CFLs for energy consumption, but will not have all the other environmental problems. Then another buying craze will begin and CFLs may begin to be phased out, leaving behind a long-term problem of mercury disposal, remediation, and an untold toll on human health.

In the meantime, the best way for you to reduce your carbon footprint is to follow your mother's advice and turn the lights off when you leave the room.

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