

Comment Contribution to the Canadian Light Bulb Regulation Proposal

Preliminary Version: Notes

Only slight changes, corrections and presentational page polishing is foreseen, but I wanted to circulate this as soon as possible, also given that the Canadian Parliament shuts soon according to the legislative calendar.

The general background to the below can be seen here:

<http://freedomlightbulb.org>

In terms of electricity and energy efficiency regulations in a wider sense

<http://ceolas.net>

having of relevant Canadian interest here, light bulb heat section <http://ceolas.net/#li6x>

and particular advantages to Canadians of incandescent lighting <http://ceolas.net/#li11x>

However, the following is otherwise more detailed in several respects, obviously and particularly with reference to Canada.

Any clash of data should default to the below, as being, for the most part, more recent.

Any update information will also be placed on <http://freedomlightbulb.org>

Update:

The relevant introductory initial post is

<http://freedomlightbulb.org/2013/12/o-canada-how-aligning-to-us-law-will.html>

Canada and Nordic countries: Incandescent Light Bulb Usage Advantages

<http://freedomlightbulb.org/2013/12/canada-and-nordic-countries.html>

Why Ban the Bulbs?

Alternative Information, Taxation and Market Policies to Product Prohibition

<http://freedomlightbulb.org/2013/12/why-ban-bulbs-alternative-information.html>

Concluding Post:

Incandescents: The Real Green Bulbs. Also in Canada.

<http://freedomlightbulb.org/2013/12/incandescents-real-green-bulbs-also-in.html>

14 point general rundown of why light bulb regulations make no sense

<http://freedomlightbulb.org/p/how-bans-are-wrongly-justified.html#ban>

What Canadians are not being told about January 1 2014 Light Bulb Regulations

Enforcing US Law: Losing Independence, Industry, Jobs and Choice, with Hardly any Savings and Hardly any Halogens.

In a seemingly hastily written October proposal, just in time to invite standard 75 day comment by December 19 (leaving little time for any subsequent serious analysis, should perchance the Cabinet be interested in doing so), Canadians are told that by aligning to USA standards Halogen bulbs, similar to regular incandescent bulbs, will not be banned.

They will.

And that's just the start.

1. Why Alignment to USA will also ban Halogens

The supposedly allowed Halogens banned on USA EISA tier 2 2014-2017 backstop final rule equating to CFL standard. Following Washington means following any other change they make. Proposal already envisages further restrictions.

2. What is good for Canadian Industry, Jobs and Consumers?

Light bulbs stated as the first of more US laws in manufacture and service to harmonise NAFTA standards. Allowing US based corporate access does not mean having to legislate against local production to local desire.

3. How Incandescents have particular Advantages for Canadians

Beyond heat, also brightness, and situational advantages in large homes where much time spent

4. Simple Incandescent Advantages versus Halogens

Halogens more complex and expensive for little savings advantage, hence unpopular in free choice either with consumers or politicians.

5. On Energy saving for the Nation

Fractional overall and on comparative policies, and a main off-peak time use avails of surplus production capacity anyway.

6. On Emission saving for the Planet

Ditto, with the addition that Canada has 86% emission-free electricity and that emissions may increase on heat replacement effect

7. On Money saving for the People

Ditto, with the addition that free choice is not always about money saving, that many bulbs are not often used, and that subsidies plus utility compensation may mean higher bulb and electricity payments anyway via tax or electricity bills.

8. Worldwide Policy and Major Manufacturers

Cooperation to enforce low lifespan on incandescent bulbs followed by cooperation to altogether ban such now patent-expired generic cheap competition. Plus ça change, plus c'est la même chose.

9. Alternative Policies targeting Light Bulbs

Information, taxation/subsidy and market competitive alternatives could and should be considered before bans.

10. Incandescents - the Real Green Bulbs?

Efficient, earth saving, long lasting and sustainable.

The simplest way to produce bright light from electricity banned for being too popular, by the stupidity that passes for global governance.

1. Why Alignment to USA will also ban Halogens

USA Energy Independence and Security Act of 2007/Title III/Subtitle B/Section 321

*"The Secretary of Energy shall report to Congress on the time frame for commercialization of lighting to **replace incandescent and halogen** incandescent lamp technology"*

A backstop final rule relates to a cycle of rulemaking that will start in 2014.

*" BACKSTOP REQUIREMENT— if the **final rule** [not later than January 1, 2017] **does not** produce savings that are greater than or equal to the savings from a minimum efficacy standard of 45 lumens per watt, effective beginning January 1, 2020, the Secretary shall prohibit the sale of any general service lamp that does not meet a minimum efficacy standard of 45 lumens per watt"*

As the Energy Information Administration at the Department of Energy puts it, the second tier of energy efficiency improvements **"at the latest becomes effective by 2020, essentially requiring general service bulbs to be as efficient as today's CFLs"**

The stated purpose of the new proposal is to **align with US legislation.**

This of course means that **guarantees about what will or won't be allowed can no longer be given in the future.**

As it happens, halogens promised a reprieve in Canada will be banned in the USA.

The US wattage based regulations were previously deliberately avoided by Canada citing several disadvantages with the US system including less bright bulbs being allowed in place of brighter ones, usage of higher wattage class defeating the purpose etc. This is not mentioned now in changing standards, a change mainly justified by facilitating company product development and distribution to a bigger market. The original MEPS legislation is SOR/94-651 part 1 Items 136-139 with luminous flux based definitions (unfortunately not shown or linked in the proposal).

A highlighted beneficial effect is said to be that American standards will allow incandescents in the form of Halogens, albeit still with differences to simple incandescents and a lot more expensive.

However, not only would some higher energy efficiency halogen types not have been banned anyway, but as seen current USA legislation bans all incandescent technology including touted halogen replacements for general service lighting, EISA 2007 law tier 2, 45 lumen per Watt regulation, aim 2017, backstop 2020.

Usual replacement Halogens at 18 lumen per Watt, 20-22 at best, are way below that.

The notion that manufacturers would improve halogens falls on commercial consideration (as they at length explained in the November 25 EU meeting and documentation), and for example Philips already quietly dropped promised EcoVantage development once the 2009 EU ban had been achieved.

To reply that

"Canada will just adopt the first (USA Tier 1) levels and won't ban Halogens even if the USA does",

is not in keeping with proposal's purpose and argumentation of aligning with USA standards in the first place, including the specifically stated supposed advantages of suppliers not having to deal with two standards for products.

Notice also that 45 lumen per watt is a minimum standard and is set to be followed by others (USA background documentation talks of Tier 3 in 2020).

Notice also that these are and would be technology-neutral standards.

So the splitting up of different products for distribution becomes more difficult anyway, and of course all the more so should further USA rules not be to Canadian taste.

45 lumen per watt is based on fluorescent lamps that are going out of political favour, and the hitherto mercury-exception of fluorescent lamps may come to be abolished, if they don't disappear from markets beforehand given recent decreases of allowable mercury levels in some jurisdictions like the EU, which make them less commercially viable to sell.

Of course those who criticise bans on incandescent bulbs might be pleased to see the CFL (fluorescent, "energy saving") bulbs go.

But they could instead lose both.

Be careful what you wish for!

The big noise in the world of lighting regulation is "Ledification", Japan aiming for a total switch by 2020 and the European Commission conspicuously avoiding mention of CFLs in their circulated proposal in current talks with stakeholders dealing with the timing of banning halogens and pushing a LED switchover.

[LEDs certainly have energy efficiency advantages, but are also very difficult to make as bright omnidirectional incandescent bulb replacements at low prices, along with other issues covered later - all lighting types have advantages and disadvantages, primarily incandescents as bulbs, fluorescents as long tubes and LEDs as sheets - which is also how the latter 2 were first developed]

Notice how all this is all applicable to **any** aligning to allow Washington to dictate what Canadians can or can't buy, and which may or may not be to Canadian taste, not just with light bulbs, and not just with energy efficiency regulations, given the stated

ambition to expand such regulatory alignment and favour multinationals in their North American product development and future distribution of products (see section 2 on industry policy below).

Alternatively, the Canada Government knows about and plans a future ban on halogens. It is after all true to say that "halogens will still be allowed" - for now.

They would also be **doing exactly what the USA, EU, and Australia ruling officials did before them:**

Wave funny bulbs around to visibly show they were "doing something" about global warming, while "assuring" everybody that "lookalike halogens" to traditional bulbs would still be allowed.

It would also seem strange if Canadian lawmakers did not know US law before shifting to it.

The proposal finishes, perhaps with admirable openness:

*"...over time, it is anticipated that the proposed standards would help to increase the level of acceptability for MEPS for many Canadians, thus **facilitating the adoption of further MEPS for these and other products in the future.**"*

Put the frog into boiling water - it jumps out.

Put the frog into cold water and keep heating it - the frog is cooked

"How to Cook our Canadians"

So, Canadian Cabinet...how about the Canadian public not being duped about "what is allowed"?

In this regard, one should also be aware of how regulations are coordinated and arranged to achieve a desired purpose (read, ban completion).

Jurisdictions like Canada, EU, USA and Australia are in close contact as seen from background documentation to legislation and international meetings between energy agency officials and major manufacturer representatives.

Regulations are therefore divided into Tier 1 and Tier 2 processes.

The original 2012 Canada plans also had a Tier 2 2015 phase-out intention.

Staggered implementation is of course understandable in cushioning the effect both for manufacturers and consumers as new technology is introduced.

However that also allows - or should allow - unbiased monitoring of the effects on consumers of lighting availability and quality, and that supposed energy saving actually takes place.

But follow-ups are no fun for politicians - promises are. The typically and suitably long-term savings projections also apply for Canada (2025, see the proposal annex) allowing

catchy quotable big savings figures, and then to say "Well, buddy, we'll check on that in 2025"! Brilliant - the decision makers long since having retired.

Suggested evaluation based on just measuring assumed savings from how products have been adopted (handy for the backing companies, who don't have to pay for that research themselves!) is hardly the same - and misses the overall consumer impact. In BureaucratSpeak, "stakeholders" aren't any guys and gals strolling around Queen Street in Toronto.

Both the EU and the USA have 2014 review processes:

These should therefore have meant a neutral assessment of Tier 1. But as the continued bans are already written into legislation, the reviews are mainly about alternative lamps and possible change in the *timing* of Tier 2 implementation. Talk about a 1-way street. As for the USA, it's not just that halogens are legislated to disappear sometime before 2020. The Obama administration in cooperation with the Democrat controlled Senate Energy Committee already tried to tighten lamp and other energy efficiency regulations in 2011. But as with many bills, it did not make it through Congress. Lowering the standards requires Congress passage, and the President's signature. Hardly anytime soon.

A further possible reason why the officials writing the laws want Tier 2 bans already legislated in place, is the difficulty and nuisance of having to revisit the issue in public or parliamentary debate.

US law is of course already difficult to alter as just noted, and this applies also in the 28 nation and multi-institutional EU.

Canada is different, and could be different, in openly considering what is right or wrong, and not just for multinational corporations.

The proposal here does commendably invite public comment....

but why is it kept away from **Canadian Parliament** for debate, all the more so since proposal comment finishes Dec 19, with MPs already being off looking for turkeys and tourtières on the 13th and not back until Jan 27?

The government cabinet rubberstamping American legislation into place over the holiday period surely sets a bad precedent if it hasn't done so already, given the mentioned ramifications.

The bigger picture about the light bulb regulations is not any guarantee about halogens. **The bigger picture is about why light bulb ban regulation is necessary in the first place - and particularly in Canada.**

Canada has no obligation to ban either halogens or simple incandescents. This was shown in already delaying ban implementation.

Canada is - still - an independent country.

If it is not in the interest of Canada, Canadian business, Canadian jobs, or Canadian consumers to ban lighting products on other than safety grounds, then it should not be done.

And it isn't...

2. What is good for Canadian Industry, Jobs and Consumers?

"This proposed amendment would support the Government's regulatory policy of aligning with American standards, where feasible"

"it is anticipated that the proposed standards would help to increase the level of acceptability for MEPS for many Canadians, thus facilitating the adoption of further MEPS for these and other products in the future."

"compliance risks are much less than they would be if Canada had unique standards. Canada would benefit from the compliance regime that is in place to support U.S. standards."

Adoption of US standards for many more products - not just concerning energy efficiency - is set to continue.

The US dominance on the North American market hardly means Washington adopting Ottawa standards.

This does not just sideline Canadian autonomy for its own sake.

It means no longer making products to specific Canadian demands, should they conflict with American desire.

So, should the border just be shut, to only have "Canadian products for Canadians"?

No, the point is not the protectionism angle.

The point is that allowing American standard products in Canada, does not mean having to ban products made to specific Canadian demand and desire.

Manufacturers can still make American standard products both for internal market or export, as they wish.

Presumably if the American standard is so attractive for the major multinationals for market reasons, then they'll make to that standard, and leave the smaller specific Canada demand to Canadian suppliers.

They don't "have to suffer regulatory burden by making products to 2 standards", as the proposal basically puts it.

This is therefore about a lot more than light bulbs, it is about any product that because of climate, geography, culture, or other reason might be of value to Canadian consumers.

Legally, in a case of regulatory conflict between the Canada and USA standards, if a Canadian requirement is deemed less stringent, that is obviously not a problem - the point here.

If a Canadian requirement is more stringent, perhaps on environmental or safety grounds, that is still justified on Canadian rights as a sovereign country.

The Government proposal at hand is overly focused on helping major manufacturers sell in both countries, repeatedly stating so.

Maybe some more widespread consideration is justified.

Yet even on such narrowly defined market-minded economic justification for bowing to Washington, the question is if it's a good policy.

To keep **adopting US standards will likely cost Canadian supply and distribution jobs**, especially of already existing standards as supply and distribution to those standards is already well established on the bigger US market, but also of simultaneously applied standards, as larger US based suppliers simply extend the reach for their products.

Conversely, while still allowing such free trade movement of goods, **the freedom of manufacture to local needs gives local jobs and locally satisfied consumers.**

Also if **Americans are not making or distributing such products** then clearly **all the better for Canadian jobs.**

Turning specifically to energy efficiency regulations, such as on **light bulbs**, the **relevance of what has been said is even greater**, on several counts.

Firstly, by adopting US legislation, USA based control becomes even more likely - their manufacturers and distributors have had regulatory knowledge and established implementation for several years on any such regulatory shift.

With the light bulbs, that's **7 years knowledge and 2 years implementation for rival US companies.**

After all, the proposal makes much of how manufacturers prepare for standards in advance (and, conversely, if anything, Canadian suppliers prepared for the wrong MEPS standard).

Secondly, how big is current and assumed future Canadian light bulb production anyway? While I have been unable to find figures (and, again, the proposal could have supplied them!) it presumably mirrors the USA and EU in dominant Chinese CFL/LED imports and dwindling local incandescent/halogen manufacture.

Maybe it's great to help the Chinese (as also outsourced by Philips. GE or Osram-Sylvania) but surely not of utmost importance,

and on the distribution side that again comes down to likely American control on a unified market for reasons given.

Thirdly, with energy efficiency regulations it need not be USA versus Canada standards. Not having energy efficiency regulations in the first place opens up to true manufacturer freedom without the "regulatory burden" that the proposal worries so much about. That obviously need defending of itself, and will be done for light bulbs, but one should also be well aware of what it would mean for industrial policy and jobs, given the industry focus in the proposal.

The tone of the proposal is of abandoning regulations with threatened chaos. But it is just to continue without implementation, and with manufacturer and consumer freedom.

A freedom that allows the start up of making popular bulbs, that hasn't hitherto happened given threatened regulation.

The popularity of bulbs to be banned (phased out, regulated..) is hardly in doubt. If they were not popular, there would be no "need" to ban them and celebrate the supposed savings.

There are in fact **many reasons why it is both easy and attractive to set up local small/new Canadian manufacture and sale with associated jobs of traditional light bulbs.**

Firstly in being **popular**, as mentioned.

Secondly in being **simple and easy to make.**

Thirdly in being **generic patent-free bulbs** without licensing requirement from major manufacturers (now guess why GE/Philips/Osram-Sylvania want those bulbs banned).

Finally, in being **without competition** from America, and with likely little competition from anywhere else - while always allowing alternative "energy saving" bulb manufacture and sale as desired on the market.

Canada could have a considerable domestic light bulb industry of incandescent lighting.

Can the same be said about CFLs or LEDs?

Responding to the idea that regulations might actually not be imposed, the proposal suggests:

"Canada could become susceptible to product dumping from manufacturers from other countries seeking to sell traditional incandescent light bulbs no longer permitted in their own country."

This repeats what they said 2008 in defending the first MEPS regulations.

But bans have now already been legislated in many other jurisdictions (rationale later) and the proposal itself emphasizes how manufacturers prepare for them.

So the notion that those guys have been stockpiling incandescents on-the-side, just to dump on Canada in case Canada does not implement a ban, hardly holds.

Besides, Canadians would get more choice, and would have to want to buy them in the first place - "terrible" if they can buy what they want?

Finally, any dumping problem can always be met by import controls - it does not necessitate, nor does it justify, banning what people want to buy.

Two further justifications are given for not abandoning regulations:

"Suppliers to the Canadian light bulb market have already made considerable investments in research, development and retooling to meet the MEPS as written in 2008. Canadian retailers have begun selling, promoting, and educating consumers about more efficient bulbs."

As for Canadian **retailers**,

I am sure they would be delighted to sell whatever Canadians want to buy.

Educating about "efficient bulbs" - that presumably means bulbs efficient in producing bright light using few components?

No? Well, that just shows how politically correct language is defined - handily substituting "efficient" for "energy efficient"

(as with calling fluorescent bulbs "energy saving" bulbs:

Hello Mr Retailer, can I have one of those Energy Wasting bulbs please? Ah, gosh, thanks very much!)

As for **suppliers** to the market,

the odd notion is this invitation to cry for them when they now instead have full freedom to make and supply what they want - including the bulbs they prepared for.

Compare with if they had been busy preparing to sell a bulb that was then made *illegal* !

The manufacturers were perfectly free themselves to stop selling incandescents if "they are so bad for the planet", as their press releases keep saying, and the media keeps swallowing. After all - the same GE/Philips and other companies stopped making record players, cassettes, 8-tracks and much else in the name of "progress".

But "unfortunately", others would make the popular bulbs if they stopped!

No manufacturer/distributor should rely on bans on competition to shift product they presumably have some sort of confidence and ability to sell.

Besides, the big American market would still have the limited competition they want.

Moreover, if the suppliers were preparing for the Canadian standard, "MEPS as written in 2008" and it "is a burden to make and distribute to both American and Canadian standard", well, then the suppliers have been preparing for the wrong standard, with Canada Gov now pulling the rug from under their feet!

Also, the fact that simple traditional light bulbs are easy to make means those guys can easily "retool" and make them too, and have the limited competition from USA on that score as already described.

Don't cry for me, Argentina.

For deeper discussion of industrial policy and manufacturers, **see section 8**
Meanwhile, do these bulbs really have any value for Canadians?.....

3. How Incandescents have particular advantages for Canadians

First, a summary of general advantages of Incandescents, then particular advantages to Canadians, and afterwards, a look at simple incandescent advantages vis-à-vis Halogens.

General incandescent advantages

A high quality 100% CRI (color rendering index) light with a warm characteristic: Incandescent lights have a smooth broad light spectrum, which in ordinary light bulbs rises more towards the red end, giving the characteristic warm glow, increased on dimming (fluorescent and LED lights give out different types of light...LEDs also in car headlamps, bicycle lights, flashlights/torches, sees an often bluey omnidirectionally weaker but point source glare type of lighting taking over in society).

The light bulbs have for many a pleasing simple appearance, and the transparency sparkle effect makes their use in some lamps, lanterns, and chandeliers attractive. They are versatile with dimmers and sensors, advantageous where vibration or rough use is expected, and in very hot or cold conditions when they are also quick to come on. Moreover, the heat of the light bulbs (of itself often useful) finds direct applications in space heating applications, greenhouses, hatcheries, pet keeping etc. Converse arguments note the situational disadvantages in particular of CFLs, for example in recessed and enclosed fixtures or humid (bathroom) situations

The brightness issue

Small and standard size incandescent lights are particularly useful, since CFL or LED equivalents usually can't be made as bright, and when they can they are even more expensive than usual.

The early ban on small/standard 100 Watt bulbs is therefore particularly ironic, added to by any future absence of halogens.

Such bulbs have especially good and cheap brightness as well as heat benefit, with 100W bulbs being at the same low price as other bulbs (and yes, that is also a reason they "must" be banned quickly based on what people might otherwise want to buy, such that big "savings" can be announced instead).

Fluorescent and LED lights, often dim to start with, also dim more with age, shortening lab quoted lifespans.

Fluorescent encapsulation (with pear shaped outer envelope, recommended for close use) further reduces brightness, similarly the phosphorescent covering of LEDs to spread the point-source lighting reduces brightness in any direction.

Cheap Chinese imports, directly or for assembly and rebranding, also mean that brightness retention, lifespan and other issues remain with these lights.

Any older reader might like (or not like) to note that not only do older eyes need brighter light, but ageing also means yellowing eye lenses so that they absorb the greater blue light component of fluorescents and LEDs, making them appear still dimmer.

Je vous souhaite la retraite agréable.

Safety issues

Normally products are banned for being unsafe to use.

The irony here is that old and thereby well known bulbs in their safety are forcibly, albeit gradually, replaced by CFL and LED bulbs with several health, safety, and environmental concerns.

There is little point in going through the concerns here which can easily be found in online discussion and documentation - especially regarding fluorescent lighting mercury and radiation concerns, which after all also influenced the 2 year regulatory delay in Canada. Those issues have of course not simply gone away, including accidental breakage of CFLs and their recycling as alternative to being dumped (and with some calls for LED recycling too, see below).

A point of irony is the light bulb heat issue.

Irony, because politicians and journalists and indeed the info sheets from the OEE (Canada Gov office of energy efficiency) love to say how incandescents "waste 90-95% of their energy as heat", never a word that CFLs also waste 70-80% and current LEDs 50-70% of their energy this way.

Irony, because while much incandescent heat is radiated externally to potential use, CFL and LED is internalized, with unpredictable fire risk, especially of CFLs (incandescent heat being more noticeable in burning lampshades and the like, to warn users).

Not only do incandescents often usefully release around 95% of their energy as heat: Proponents conveniently "forget" to add that CFLs and LEDs really waste energy as heat, CFLs 80% and LEDs 70%.

That is because the CFL/LED heat is internalized, to give a greater, unseen, unpredictable fire risk, particularly with CFLs (incandescent heat being more noticeable, to warn users).

A brief further word on LEDs, as the touted catch-all replacement product.

Just to mention 2 aspects and 2 institutional references.

The official French health agency ANSES in a 2010 multi-disciplinary study highlighted point source glare and blue light radiation issues and various side-effects, echoed by several other studies, and unusually in a repeat call 2013 complained to the Commission that nothing was being done.

Similarly the Department of Chemical Engineering and Materials Science, University of California, USA has been involved in several multi-disciplinary and multi-institutional and international (Korea) studies concerning the toxicity and environmental effects of LEDs, including depletion of rare earth minerals, and calling for recycling as with CFLs.

Certainly, new technology should be welcomed for its advantages.

But it does not necessitate banning the old - it seems remarkably hard for politicians to understand that manufacturers themselves can and do move on the new products, without the necessity of bans, and that there are many other ways both of reducing energy consumption in general and of enhancing energy saving product purchase in particular.

Progress is welcomed - not feared.

True progressive politics brings more choice and more advantages, a progress helped - not hindered - by allowing competition against that which already exists.

Politicians love to keep saying how "energy saving products are getting better and cheaper all the time".

Good.

Then presumably people might actually buy them - voluntarily - while still allowing niche special use of "old" varieties.

We've witnessed an incandescent to solid state switchover before - and with the same GE, Philips etc companies.

The audio version. Incandescent audio tubes to solid state (LED-like) transistors.

Now then: If that had been today, then worldwide the call would have been to ban the "energy guzzling" audio tubes.

Which in turn would have prevented rock era tube amps and other niche audio processing developments.

Politicians set energy cut-off standards thinking they just ban existing products. But they also ban what might have existed, and never will.

Ergo:

New lighting is better - why ban old lighting, no point

New lighting is not better - why ban old lighting, no point

Incandescent advantages for Canadians

(i) Canadian homes tend to be big in international comparison, with more light bulbs:

Canadian around 35 light points per home, EU average 20-25 (less in Southern Europe), USA 40-45

Thereby:

- Increased variety of conditions where different lights are useful, so a ban on any lighting type is felt more.
- More individual rooms and lamps with lights that are not often used - reducing supposed running cost savings after buying expensive "energy saving" lighting

(ii) Canadians have a higher need and usage of lighting itself:

- Increased time indoors, including at home, because the homes are bigger, better and more comfortable, related both to the cooler climate and to a greater household wealth, compared with most other countries.
- Increased time indoors, including at home or other situations where the lighting can be chosen, because of colder climate and also because the dark winter season is only partially offset by summer brightness for working Canadians outside vacation times, when some rooms will likely still need to be lit up fairly early

(iii) Canadians more often have cold conditions that can affect the lighting used:

- Incandescent lights come on quickly in the cold. While nowadays CFLs have little delay in ordinary conditions, that does not apply in cold conditions. LEDs also are more sensitive to ambient temperatures (both hot and cold performance deterioration).
- Cool or cold conditions can combine with other usage factors unsuitable to other lighting, like incompatibility with sensor systems and/or frequent on-off switching, as with hallway and passage areas, bathrooms, outdoor porch and garage lights. On a more curious note, replacing incandescents with other lighting has reportedly seen Canadian traffic lights being obscured by snow in wintertime, whereas beforehand the incandescent heat would keep the lights clear.

(iv) Canadians particularly benefit from the light bulb heat effect:

- The heat effect, of which more later, gives an overall reduction of energy use to maintain room temperature.

That is not just from being used more than air-conditioning cooling through the year. Even in the summer, when it is dark, it may be cold enough to turn on room heating. Besides incandescents can be changed as desired if conflicting with air conditioning - and may of course be preferred anyway for their other advantages.

- The house insulation factor: Well built Canadian houses that are well insulated, giving a greater light bulb heat benefit compared to more poorly insulated ones elsewhere, as in the UK. The heat from bulbs stays in the room, not escaping through the ceiling. A point of irony is therefore how governments are increasing home insulation schemes to save on heating, while banning bulbs which, proportionate to small energy use of course, would thereby contribute more to such heating.

(v) Canadians are more likely to enjoy the psychologically warm effect:

Incandescents tend towards the red end of the spectrum, while unmodified fluorescents and LED lighting have more blue light, cooler in effect.

Also, when dimmed, the warm effect of incandescents increases: and people in northern countries like Canada or Nordic Europe are more likely to entertain others in their homes for say dinner parties, possibly also for cultural reasons.

Compare with warmer regions where people go out more to socialize, have no control over such lighting used, and barely use their own home lighting that they can control.

(vi) Canadians are more likely to enjoy bright light:

Having longer darker winters, and generally with less bright conditions than more tropical locations.

100W+ bright equivalent lighting is less easy to make in fluorescent or LED bulb form, is not often available for general household use, and is particularly expensive when it is (and is still not widely possible omnidirectionally with LED bulbs).

The importance is also seen from the existence of SAD, Seasonal Affective Disorder in Northern countries generally, where the lack of light during winter months plays a role as seen from the bright light phototherapy treatment that is involved.

4. Simple Incandescent Advantages versus Halogens

As the separate promotion of halogens is an issue in the proposal, a short separate section here.

Those wishing to know more about any light bulb type can of course simply do so online.

Halogen incandescents are similar to regular incandescents, but still have several differences, a slight appearance variation, running hotter, a whiter light quality, and containing toxic bromine or iodine gas but in small quantities not deemed harmful.

The most noticeable difference is cost, the constructional complexity being reflected in a far higher price, typically 4-6x and giving only marginal running cost savings, and only for most used bulbs (eg 3 hrs/day 11¢/kWh, \$8.67 dollar/year, 72W for 100W replacements on Philips US data).

This is why such replacements are not popular given a free choice, either by consumers or politicians - no "halogen switchover programs" as with CFLs (compact fluorescent "energy saving" bulbs) or LED bulbs!

In turn, manufacturers have not been keen on trying to develop halogens, as already noted in previous discussion, currently preferring more profitable production investment into LEDs (and getting more government subsidies in the process).

Of course halogens have advantages in their own right too, as in a whiter light for those who prefer that.....

As a final note, all light bulbs of course have their advantages.

Primarily, as briefly mentioned, incandescents as **bulbs**, fluorescents as **long tubes** and LEDs as **sheets** - which is also how the latter 2 were first developed

Most opposition to banning incandescents is how bad "energy saving" replacements are. There is a certain irony that on traditional safety grounds for banning bulbs, fluorescents might have been the ones first targeted, certainly by environmentalists in another age given mercury and radiation issues.

But the further irony is that those opposing bulb bans and such grounds are getting more than they bargained for,

since more stringent mercury criteria are in effect phasing them out anyway adding rather than replacing the ban on incandescents.

Meanwhile light bulb manufacturers have had a double profit whammy of subsidised

CFL replacement followed by subsidised LED development. And all the time lots of bureaucrat jobs, for pedantic usage standards.

Energy saving is not the only advantage, and mandating lower energy use on a given product affects usability and performance characteristics as well as price. There is no free lunch.

And when it comes to the energy saving itself, well....

5. On Energy saving for the Nation

The press release on the proposal has the justification that "*lighting accounts for approximately 10 percent of a home's electricity use*" ...and indeed 12-15% figures were quoted by the EU and USA in similar justification (there is a certain blueprint philosophy behind banning bulbs, followed by agencies who follow one another and subsequently followed by most media folk who just regurgitate what they get).

There's a lot of the **Cake-That-Gets-Smaller-And-Smaller** about such statements.

First of all, not all lighting in a home is relevant as mains-voltage general service incandescent bulbs!

2007 OEE survey (apparently the last, at least as listed) has for an average household 48% incandescent, 17% halogen 22% CFLs and 13% fluoro tubes, apparently not differentiating between low and mains voltage halogens. BC Hydro (British Columbia) and other data has similar federal estimates.

That certainly cuts the cake!

If anything, a little extra cutting, as switchover campaigns and subsidies have surely had an effect since 2007, and LEDs don't figure.

Then again, "LEDs are getting better and cheaper all the time" as ban proponents keep saying. The proposal acknowledges that such switchover is likely to occur by itself albeit that bans quicken it. But in that case, it should be acknowledged in further reducing the savings.

Then, not all lighting is equally used. Kitchen fluorescent tube lighting dominates on other usage data as per website references (not seen on OEE but the 13% fluoro tube figure suggests likewise). More cutting of the cake.

But any replacement lighting for incandescents will of course also use electricity!

Then there are the rebound/performance based compensatory uses of replacement lighting.

Cheaper to use products tend to be used more, on "rebound" studies, and an Iowa town switchover study showed increased lighting use, possibly partly because CFLs can be left on if used at frequent intervals to increase lifespan (and to avoid nuisance waiting in cold locations). I know of no domestic LED replacement usage studies but oriental commercial LED replacements have seen unexpected cost rise possibly from multiple directional LED replacement of fluorescent lighting. Additional to website references I found in contributions to MEPS 2008: "for residential lighting [rebound effect] 5% to 12% can be expected (Greening et al., 2000: 394)."

Meanwhile, perceived dimmer lighting (which also occurs with increasing age whether of CFL/LEDs or of people using them on their blue component absorption of ageing yellowing eye lenses, see earlier lighting section) may lead to more lighting used, also of directional LEDs in compensating for omnidirectionally brighter incandescents. More cuts to the cake.

Now then. Percentage of domestic use is of course not a percentage of all grid demand, 4 or 5 sectors normally used, like municipal, commercial, industrial, and transport as well as domestic.

No prize for guessing that lighting as usage component and particularly incandescent bulb as usage component is pretty well zilch of that - and put to overall demand one might, generously, say that around 1% is saved *gross* but in turn lowered in practice by other factors as per discussion following.

Metered electricity saving is not energy saving.

Firstly because there is no direct coupling of light bulb burning and turbine turning and there is always an electricity generation surplus to cover the assumed need - compare with banning a conventional car, for reasonably direct oil saving. This is expanded on below.

Secondly, on the so-called power factor of common CFLs and LEDs being worse than incandescents, leading to phase related energy issues not recorded by common domestic meters but a source of grid disturbance that in effect raises energy use, a varying problem depending on the nature of the grid (such "unbalanced" electricity use is cost penalized for commercial users).

Thirdly on the heat replacement effect, where the wasted heat of bulbs may be useful not least in Canada as covered before.

Additional to website Canadian references, Canadian Center for Housing Technology (CANMET, 2004), 83% to 100% of lighting energy contributes to an equal heating demand reduction during the heating season.

Fourthly on the greater total life cycle bulb energy use of CFLs/LEDs (and Halogens) outside consumer usage, compared to simple incandescents.

This means from mining to recycling and transport in all stages. Much of the energy issue is not applicable nationally for imported bulbs, but certainly emissions are and indeed environmental rare earth mineral use, so it is covered in later sections.

Suffice to say that the usual assumption of product assembly energy use equating to life cycle is a gross underestimation.

This is not totally unnoticed in scientific circles, the below using just a few of the above cake-cutting so in effect it's lower still than what they say....

*The total reduction in EU energy use would be $0.54 \times 0.8 \times 0.76\% = 0.33\%$,
This figure is almost certainly an overestimate,
particularly as the inefficiency of conventional bulbs generates heat which supplements
other forms of heating in winter.*

Which begs the question: is it really worth it?

*Politicians are forcing a change to a particular technology which is fine for some
applications but not universally liked, and which has disadvantages.*

*The problem is that legislators are unable to tackle the big issues of energy use
effectively, so go for the soft target of a high profile domestic use of energy...*

...This is gesture politics.

Using official European Commission VITO data, this comes from the Cambridge University Network under Sir Alec Broers, Chairman of the UK House of Lords Science and Technology Committee, Scientific Alliance section, reflecting the views before and since the light bulb ban announcement of physics professors and other scientists from several institutions, similarly with other website referenced university energy department reports from Canada, Germany, and Finland.

Political decisions don't necessarily have the backing of independent scientific research, and scientists are less politically vocal than well-meaning but misguided environmental activists.

Whatever the saving, it is small in society usage terms.

A rational analysis of the need for any saving first looks at overall energy availability. This is not just about "enough energy" being available.

A shortage of any given source raises its price and reduces its use anyway.

Look at the 1970's oil crisis, more expensive gasoline/petrol, less use, more demand for energy efficient fuel saving cars - without regulations.

Since electricity generation is a multiple source energy user, that also means that any projected shortage of fossil fuels simply increase the attractiveness and investment in alternatives.

Again, even if savings are supposedly needed, or politically desired, the amount actually saved by any measure then has to be considered, both in terms of other ways to save equal or more energy, and the cost penalty for such a measure in terms of the value to society and individuals of a product to be banned (standards obviously ban products not meeting the standards, and demanding lower energy use of a given product affects construction and characteristics like usability and performance as well as price, as per previous discussion).

Bans on bulbs are a politically driven measure to satisfy an odd unison of non-global non-corporate green activists and global corporate multinational executives, as per a later section.

As will be seen, there is little rationality in it, even for the crumbs of amount saved.

On the question of energy availability for electricity, and indeed low emission energy availability, clearly Canada has no shortage.

This does not mean one should waste energy.

But one might start by defining a "waste" of energy.

Leaving lights on unnecessarily is a waste of energy (as arguably occurs in municipal buildings and commercial/business locations, sometimes on the basis of allowing longer lifespan of fluorescents and the worker cost penalty of changing tubes and bulbs).

The personal choice of what lighting to use is arguably not a waste of energy.

In using energy one also has to consider what "waste" is:

If a source is renewable or long-lasting, then the "waste" is less consequential.

In Canada as elsewhere, more and more energy is renewable and/or low emission.

Fossil fuels are finite sources and of them coal is the main usage concern, as also covered in the emissions section.

Light bulbs don't burn coal, and they don't release CO2 gas.

Power plants might - and they might not.

And if they do, then coal and its emissions can be treated in various ways.

The lack of relation between light bulb electricity use and power plant energy use is also seen in considering **time of use**.

Relevant domestic lighting is mostly used from 5pm onwards, especially evening and night after 7pm in most industrialised countries as per website referenced UK and other research (Canadian study not seen but logically applicable).

This is off-peak use with surplus electricity availability for whoever wants to use it and is the reason night electricity is much cheaper on time-based charges.

Of itself a strong case against banning incandescents.

But that's not all.

Returning to coal, the main worry.

Effectively the same coal gets burned at such times regardless of whether your light bulb is on or off:

Basically, where coal plants are the main constant source of electricity, their operatively justified night level output more than covers any consumer electricity demand at such times - which is a further reason why coal-dependent electricity is so cheap then, on time-based pricing.

Turning them down any further to account for any "incandescent saving" is not done on basis of operative costs, including wear and tear and slow reheating for higher daytime use, again referenced.

And that is for relatively modern coal plants with "cycling capability" - old types as in Eastern Europe have even higher nighttime levels to save on daytime upturn. Burning excess coal is much cheaper than plant maintenance, especially with the older plants. This alone makes a farce of banning light bulbs to save the planet.

Even at peak times (centering around 5-7 pm temperate zones), limited coal use and emissions are caused relative to any electricity used.

Peak times brings on quicker responding electricity generation, such as gas or hydro powered turbines, because of heating, cooking stoves and kettles coming on (rather than any lighting).

Therefore, at such times, the light bulbs proportionally use sources with much less emissions than from coal.

So even the fractional 0.33% energy saving of the related quoted analysis hardly applies, and there is little coal or emission saving.

If there is a problem, deal with the problem:

There are much more relevant future energy savings in power plant energy efficiency, alternative energy supply, grid distribution upgrades, smart grid systems, and in alternative consumption savings, as per website reference.

In overall generation and distribution terms this can be compared to commonly 30-35% energy efficient coal plants feeding grids with 6-8% transmission losses (USA, UK and elsewhere).

Linking up Canadian grids with interconnectors under neutral (eg public) control and opening up fair competition between (private) suppliers encourages energy efficiency by suppliers themselves, as a cost reduction measure. Smart grids facilitate efficiently linking in intermittent wind/solar renewables while smart metering is not just about seeing that you "left a bulb switched on" but about shifting demand from peak times on time-based pricing to reduce the extra energy loading at such times, and to allow quick easy consumer switching between suppliers, again keeping them on their toes.

Even on consumption reduction, the focus should be on reduction of wasteful usage rather than on usage of choice, and if focusing on usage of choice might rather be on the **90%** of household consumption which is **not** lighting, and even then, on information, taxation/subsidy or market stimulation policies rather than regulation based bans on a

product that Canadians use like no other, spending maybe half their lives under artificial lighting.

These are the sort of lines along which forward looking big picture thinking Canadian politicians should be putting their minds to.

Not the nitpicking idiocy of telling Johnny what light bulb he can or can't use in his bedroom.

Stephen and Joe, you are greater than that.

Then there's the issue about saving the planet....

6. On Emission saving for the Planet

Obviously reducing energy use also reduces emissions, so much of the previous section is applicable here.

To the extent one believes that reducing man-made CO₂ emissions is relevant (as part of GHG, greenhouse gas emissions), then on market analogy it is more important than energy reduction.

This is because energy shortage raises price and reduces use without political action while saving energy saves money, and there is no direct corresponding CO₂ saving relation, hence the regulatory/tax/trading solutions around.

Emissions are not just about CO₂, but soot, sulphur, mercury, and other pollutant content.

However, these are currently more easy to deal with by exhaust "scrubbers" and other ways to treat emissions, compared to complex carbon capture and storage systems. To the extent that any light bulb production is outside Canada, such pollutants are also of less concern.

This brings us to the second point of concern about CO₂/GHG namely the global effect. So while China bulb production might be ignored in its energy use and local pollutant emissions by nationally-focused politicians, the same does not apply to greenhouse gas emissions, judged on the GHG saving advantages expressed in the Government proposal

However there are then at least 3 factors that make emissions saved from light bulb use even more questionable, than energy savings, even to the extent that GHG emissions increase for consumers.

Firstly light bulb use has at least some sort of **linkage** to power plant energy use, within the reservations of the last section.

This is of course is **not the case with emissions**.

Power plants might be GHG releasing, and they might not, and the amounts can be expected to keep decreasing both on energy source policy and if adequate GHG removal methods can be put in place.

That is also why the typical ploy of using old data projected forward lots of years for big quotable GHG savings is misleading (in fairness, the proposal uses high and low saving scenarios).

Looking at Canadian Electricity Association 2011 data, we have in descending order Manitoba, Quebec, Newfoundland and Labrador, British Columbia and Yukon all with over 90% non GHG emitting hydro energy sources, and Ontario with 62% nuclear. Overall 63% hydro, 15% nuclear, 8% intermittent renewables (wind, solar, tidal), making it 86% non-GHG related federal electricity production.

Add for Alberta and other coal source users the likely power plant night operative factors covered before.

Its crumbs of crumbs stuff in light bulb switching emission saving.

Secondly, the mentioned **heat replacement** effect,

confirmed by multiple Canadian institutional research in turn means increased - not decreased - GHG emissions from switching away from incandescent bulbs, when "clean" non-emitting electricity for the bulb heat replaces room heating from GHG releasing sources like say oil.

There are some federal studies and studies comparing Quebec and Alberta and British Columbia and Alberta on that score and varying conclusions with lots of reservations. Obviously lighting use, house construction, domestic heating systems. supplied electricity energy source and much else makes this a problematic area to deal with. So while the heat replacement is not in doubt, relating it to GHG emissions is difficult. But, at the least it adds to pointlessness of switching light bulbs in Canada on any climate change rationale.

Thirdly, **life cycle** issues.

Data "normalized" to account for longer CFL and LED lifespan still makes this a concern given the complexity of CFLs and particularly of LEDs.

Mining, component manufacture, product assembly, recycling plus transport throughout.

The energy use in the assembly of CFLs is admitted on Osram and similarly referenced data to be 6-10 times that of incandescent bulbs, while much higher as well as more variable (given much constructional variation) on less available LED data, but such data still does not include the actual manufacture of the much greater number of component parts including the internal ballasts, transformers and drivers, also noting the extra emissions from Chinese coal plant powered component manufacture and product assembly, to which should be added the environmental cost of rare mineral and mercury mining, and the recycling energy and emissions (as applicable, and when the bulbs are not merely dumped leeching mercury and other interesting substances).

In particular, note all the extra transport involved in each stage: including of rare earth minerals from Africa to component manufacture, and in turn of components to the assembly plant, as well as the transport to point of sale, with the energy use and

emissions of low grade bunker oil powered ship transport of such bulbs around the world given that local manufacture is less likely of the patented complex alternatives.

Only the product assembly energy amount is commonly acknowledged, and summarily dismissed in comparison with energy consumed by light bulbs in their actual usage.

The reason is that it is hard to ascertain figures for all the other mentioned life cycle stages that involve energy use and emissions.

But they should of course be acknowledged in overall energy/emission assessments.

The comparatively easy local environmentally friendly (and job friendly) manufacture of simple incandescents may be noted.

It is further covered below under sustainability argumentation.

But at least people save money?...

7. On Money Saving for the People

As is common in justifying energy efficiency regulations, people's money savings are emphasized.

Yet, while energy saving for society may be a justification, not allowing products that people would have bought - if they could - and applauding the savings on their behalf is a rather condescending backhander

Banning an unsafe-to-use product is understandable, banning a product or product version to save people money is not, and a similar tactic on other products would leave store shelves rather bare.

That's not all.

The other side to this is that if "ever better and cheaper LED bulbs" will be available anyway as ban proponents keep saying, then people will be buying more of them voluntarily - so that should be acknowledged in the supposed money savings.

Notice the political obsession of valuing light bulbs in terms of energy or money. Maybe lighting products should also be valued for their lighting qualities.

There is the often made case that people only buy incandescents because they are cheap.

And why not - low price is certainly an advantage

But consumers don't repeatedly buy cheap products that don't meet their expectations.

As even the proposal acknowledges at one point

("Non-economic factors also play a role in shaping consumers' purchasing decisions... Consumers who reject CFLs are indicating that **non-monetized benefits** related to incandescent halogen bulbs are **more valuable** to them than the potential long-term cost savings associated with CFLs")

But nor do they avoid buying expensive alternative products - including CFLs or LEDs.

As seen from Office of Energy Efficiency lighting data, homes tend to have several light bulb types.

This is why the aim of "total switchover" is misguided, particularly in relatively large Canadian homes with varied conditions, as covered.

Switch all your light bulbs and save money is like saying "Eat only bananas, and save money".

As for the money savings themselves,

it might be argued that politicians just mention this as an incidental side benefit to the more important saving of energy for society.

That is hardly true from usual press releases, perhaps with an eye on the voting public.

Moreover, even if energy saving is the main consideration, then the energy savings for society and thereby again for consumers in paying for that energy use is very limited for the numerous reasons already stated..

To therefore focus on additional and specific monetary reasons for a lack of savings, in the following:

The balance is between the likely higher price paid for "energy saving" bulbs and the likelihood of recuperating that cost in usage.

On the **price issue**:

Subsidies

CFLs and nowadays in particular LEDs are nearly always multiply subsidised, in local production, in municipal or utility switchover programs, and in retail sales.

In the USA the extensive CREE LED manufacture subsidies have been politically highlighted and debated and current EU switchover push involves multiple subsidies from production, to try to establish a LED industry, on the way to final sale via municipal support schemes.

All costs borne by taxpayers and not shown on the bulb price tag and not mentioned in all the "money savings data". It was ever thus.

As for the price tag itself:

A seemingly reasonable argumentation is that while LED prices will come down anyway, the price will come down quicker in only allowing "energy saving" bulbs from their obviously expanded market and the increased competition between manufacturers within that expanded market.

However:

Firstly, it does not necessarily hold on supply and demand. Having removed the other bulb choices, if there should be any insufficient supply for the new demand (eg as with complex batteries from raw material shortage of rare earth element components that CFLs and LEDs also have), that raises rather than lowers prices.

Secondly, it is irrelevant how many bulbs are sold, in that manufacturers / distributors / retailers always charge what they can depending on the price of the competition, Since cheap local bulb competition has handily been banned, and there are fewer manufacturers of newer more complex bulbs, there is less pressure to reduce prices - besides which the relevant dominant manufacturers have a history of cartels as per later section, and price fixing thereby becomes easier.

Thirdly, most of the mentioned price lowering subsidies on CFLs and LEDs are no longer seen as so necessary, given the "job done" in removing cheap competition.

Fourthly, a reason the ban was sought by the major manufacturers was profitability, on patented new technology compared to patent expired old simple bulbs. As with all other patented products (compare with pharmaceuticals) the price is higher for the duration of the patents.

That is not all.

CFLs and LEDs as said contain rare earth elements, the price rise in recent years giving an increase in their prices.

Also they are mostly made in China, where wages are rising, and shipping transport fuel cost has also risen in recent years.

Finally, CFLs (and possibly LEDs) will be subject to increasing recycling mandates on manufacturers and retailers, which will again add to consumer purchase cost.

In comparison, incandescents are of course more simply and often locally made, and have no recycling requirement.

On the **usage issue:**

The assumption is that lower running costs gives overall savings.

Firstly, it is always done on standard daytime electricity price, not on off-peak evening and night rates as applicable to the main usage times of the bulbs.

While as of today far from all consumers avail of such lower prices, and then perhaps only from 11pm or such times, this will become more common in the future with the switch to "smart" grids and meters.

Since ban proponents always use very long term savings (eg 2025 as in the proposal), they should at least make an acknowledgement note to that effect.

Secondly, no usage results from any lost, broken or dud bulbs, and many lamps in c.36 lighting point average Canadian homes are little used.

That means a long time in cost recuperation for many bulbs. Similarly little use applies to short habitation stays, temporary rentals, vacations and the like, for the purchase outlay of any bulb used.

The dramatic money savings, in fine print, applies only to the most commonly used bulbs (as, incidentally the halogen money saving information supplied by Philips, mentioned before). Typically 3 hour per day average use is therefore assumed - the same reason that 1000 hour incandescents are pro rata assumed to last around 1 year.

Thirdly, as covered before and returned to in section 8, the lifespan of regular type incandescents could be far higher than the 1000 hours in savings calculations

with proper market investment and competition regarding this ignored non-halogen technology - as it was way back in the 1920's, as also covered.

Conversely, the quoted lifespan of CFLs has repeatedly been questioned in different studies, it is based on lab test of long usage cycles and is reduced on several counts including frequent on-off switching, various ambient conditions and the gradual dimming with age that occurs, the latter two also affecting similarly non realistic lab test quoted LED lifespans.

Fourthly, any changing of fixtures and fittings as well as sensors and dimmers and other ancillary equipment incompatible with alternative lamp sizes and technology. CFL bulb base thickness militates against use in old lamps, certain chandeliers etc, and LED technology and drivers may need different control systems.

Fifthly, as far as household bills are concerned, the heat replacement issue lowers heating bills in relevant small proportionate amounts (the counter-effect from increased air conditioning cooling is smaller overall in Canada, incandescent use is always voluntary, and may be preferred for light quality or other reasons), and the mentioned inferior Power Factor of CFLs and LEDs adds to utility costs, borne by consumers as a whole.

Also, the rebound/compensation effects mentioned, of effectively cheaper lighting that is used/wasted more including that CFLs may be left on for various reasons as stated, and the greater use of CFL/LED bulbs in being omnidirectionally less bright (or perceived as less bright, from output spectrum and eye sensitivity considerations mentioned) - and other reasons for reduced overall electricity or energy savings as covered before and as referenced.

Conversely:

With any electricity saving the electricity companies make less money, and they simply raise the electricity bills, or receive state subsidies (out of citizens pockets) to compensate, as already seen in several countries (UK, Germany), US states like California and Ohio, and Canadian provinces like British Columbia.

Therefore, while it may at first sight seem odd that for example BC Hydro engages in so many CFL hand-outs and coupon price reduction schemes - why would they be happy for people to use less electricity - there are also public subsidies and/or allowed price increases behind it, and it is also commercially assumed to allow electricity supply to more customers and more base charges to be made.

Heads you lose, tails they win!

Ah, but if so many other countries are banning bulbs, they must be doing something right?.....

8. Worldwide Policy and Major Manufacturers

It is always good to make international comparisons in any national policy implementation.

One can learn from what they do that turns out well, and from what they do that turns out badly.

Also, with much ban legislation out there, there seems a common enough consensus that banning bulbs is a "good" thing.

However, as already seen, there are particular reasons why a regulatory ban in Canada is a bad idea.

Adding to that, there are varied reasons for those bans that are not necessarily applicable to Canada

Other Countries

To begin with, this is also about governments banning rather than countries banning: New governments don't necessarily agree with implemented bans. The proposal singles out the USA, Australia and the EU

In the USA,

Republicans on the right are against the ban on personal liberty grounds, and mainstream Republicans show some support, such that House rep Michael Burgess's amendment of the Energy and Water Act (passed in a compromise deal with Senate democrats getting parts they wanted) temporarily blocks funding of the oversight of ban implementation. If they got control of Congress and Presidency in 2016 they could overturn legislation which would remove the mentioned ban on Halogens, but that would still take time unless made an early priority.

While California, like British Columbia, has been ahead of federal legislation on ban implementation, Texas under Gov Perry in 2011 passed a law allowing bulbs manufactured and sold in that state. Around a dozen state legislatures have launched local repeal bills, often speculatively without success, while Gov Jan Brewer did not sign the earlier Arizona bill partly to see how the local gun law signed around the time would survive against federal wishes. South Carolina under Gov Nikki Haley are reportedly awaiting the effect of the federal ban and the mentioned attempt by Congress factions to block its effect. The South Carolina political pressure was also because of the local independent incandescent manufacturing industry.

Similarly in Australia, the Conservative party in opposition were against such regulations against individual liberty and against CO2 and climate change legislation, though prime minister Tony Abbott himself has no specific stated policy.

In New Zealand light bulb ban legislation under Labour's Helen Clark was overturned by incoming Conservative PM John Key.

In the EU, during passage of legislation, there were mounting calls for the ban to be stopped or at least delayed (like subsequently in Canada), to ascertain the safety and environmental effect of CFLs. The issue had been taken over by the then Energy Commissioner, Andris Piebalgs, but since the Parliament Industry and Energy Committee had chairman Herbert Reul and other anti-ban free market supporters, the issue was unceremoniously shunted to the Environment Committee, unsurprisingly full of green activists, who in a special call with Commission representatives were "invited" to decide themselves on the issue without normal referral to plenary debate and vote and thereby to neuter any opposition.

Somewhat dramatically that held up things up for some sessions on German conservative-liberal opposition and insistence on legal consultation and having a protest specially recorded, a month or so later an internal committee vote led by the same faction was allowed on the issue of bringing it to a plenary vote, unsurprisingly defeated (little of the goings on was made public).

National energy ministers had to sign off on it, but as part of a large energy law did not provoke undue attention.

As for where there's a lack of public opposition to the ban, and thereby also lack of political opposition, it is related to a lack of public information, and if the ban is noticed to an assumption by the general public that there's something wrong with the bulbs themselves as with normal bans.

Also the gradual effect of the ban no doubt plays a part, as per the Canadian proposal (*"With respect to an intermediate outcome, over time, it is anticipated that the proposed standards would help to increase the level of acceptability for MEPS for many Canadians, thus facilitating the adoption of further MEPS for these and other products in the future"*).

Opposition is greater where the effect is noticed more, in Europe being in the North rather than the South, and reflecting the greater value of incandescents for citizens there for similar reasons given as advantages to Canadians.

But apart from opposition on political ideology, there are other worldwide reasons for the regulations that are of little Canadian relevance

For example Cuba, Brazil and bans in other tropical countries which mention justification of acting against air conditioning cooling (a use nevertheless voluntary of course).

As for China, it supports a large national and exporting CFL and LED lamp industry, with Philips, GE and others also having outsourced manufacture there.

Major Manufacturer Involvement

Meanwhile, regarding developing countries worldwide, the United Nations via the **UNEP en.lighten program with Philips and Osram** are directly pushing for bans on incandescents (enlighten-initiative.org) and via the World Bank helping fund purchases of Philips and Osram "energy saving" bulbs which they presumably would not otherwise sell.

This brings us to the long-standing cooperation between major manufacturers, often with government knowledge and indeed backing, in terms of light bulb production and sales.

Two important points:

There is nothing wrong in manufacturers lobbying for profits and seeking to make money for their shareholders.

There is everything wrong in politicians acting against consumer and citizen interest in handing profit over to the manufacturers.

Again - there is nothing wrong in political interference in the operation of markets. But such interference should be based on increasing - not reducing - competition, by splitting up cartels and by helping new competition to the market.

Manufacturer cooperation goes back a long way.

Already in the early 19th century cross-atlantic cooperation and the mutually recognized splitting of markets was occurring

The Patent Interest Association of 1911

From Osram's own history documentation:

*"Each of the three **German** incandescent lamp manufacturers had a know-how exchange agreement with the **General Electric Company**, with the result that since 1910 technical developments at all three companies had been going in the same direction.*

On March 15, 1911 the "Patent Interest Association for Incandescent Lamps" was formed by the three Berlin companies and GE..... Licences were granted to other incandescent lamp companies.....

*For the companies involved the patent association was **a stepping stone to even closer cooperation** in the future....*

The Phoebus Cartel

Set up in 1924, the Phoebus agreement among manufacturers to limit light bulb lifespan to 1,000 hours lasted formally until 1939 through war operation, although in effect through to the late 1950's (the original agreement was set to last to 1955) and the effects are still felt today.

To summarize:

Light bulbs around 1924 typically had a lifespan of around 2500 hours, later even 5000 hours (eg Merkur Extra) having risen from around 1500 hours at the start of the century. The lifespan-cutting agreement between the major manufacturers at the time, including GE, Philips and Osram, included a special "1000 hour life committee" imposing heavy fines on any manufacturer breaking the limits - and any external smaller manufacturer that attempted to sell longer lasting bulbs was muscled out of the way from market access. Apart from the Merkur bulb, it included longer-lasting light bulbs from Communist East Germany's Narva company after it demonstrated its bulb in Western Expos. Cheap Japanese alternatives were also effectively blocked from American markets.

German researchers Peter Berz, Helmut Höge and Markus Krajewski have unearthed a lot of documentation about this and the fines, and cover past and present developments in a book (in German).

Continuing with what Osram light bulb manufacturers themselves rather frankly acknowledge:

The world light bulb agreement (Phoebus agreement):

Soon after OSRAM was founded its chairman, Dr. William Meinhardt, made it his mission not only to unite the German light bulb industry but also to achieve international

cooperation among similar companies. His aim was to build bridges and make connections to bring the world's leading companies closer together. The conditions for preparatory negotiations lasted many years until finally in 1924 Dr. Meinhardt's initiative bore fruit in the form of the "General Patent and Development Agreement". A company called Phoebus S.A. was founded under Swiss law. Its highest decision-making body was the general assembly. The chairman of the administrative board (supervisory board) was Dr. Meinhardt.

This "world light bulb agreement" was one of the most far-reaching international agreements. It included the most prominent manufacturing companies in the world, with the exception of those in the USA and Canada (though with their agreement) as direct members. [note: the transatlantic accord was also an associative market splitting agreement, see below]

Representing Europe were OSRAM from Germany, Philips from Holland, G.E.C. from the UK, the Compagnie des Lampes from France, Kremenezky from Austria, Tungsram from Hungary, the Società Edison Clerici from Italy and companies from Spain. Swedish and Swiss companies provided a representative together with medium-size German light bulb manufacturers. The initial agreement was set to run for ten years but it was extended in view of its success...

Paragraph 1 of the world light bulb agreement:

*"The purpose and intent of this agreement is to secure the cooperation of all the parties to the agreement, to ensure that their production capacities for manufacturing lamps are properly exploited, to safeguard and maintain a uniformly high quality standard, to **improve profitability in the distribution of sales**, to increase the effectiveness of electric lighting and to increase the use of electric light for the benefit of users."*

*The agreement related to all electric light bulbs used for illumination, heating or medical purposes. Arc lamps, neon lamps, x-ray lamps and radio tubes were excluded. If, during the course of the agreement, new light sources of general importance were developed they could be included in the agreement. This **applied later to fluorescent lamps**...*

Compliance with the declared purpose of the agreement was achieved by means of a far-reaching patent and know-how exchange arrangements, typing and **standardisation** of the lamps, **safeguarding of market shares for each member, reporting of all sales to the administration company and auditing of these sales**...

The American Angle

This aspect of the Phoebus agreement has been well researched by Michael P Leahy in the amusingly yet informatively well written eBook *I, Light Bulb* that also goes into current politics (with contributions by lighting designer Howard Brandston), slightly edited excerpt, highlights:

During World War I, the War Industries Board was a government-authorized, industry-staffed effort engaged in industrial planning. General Electric executives such as Gerard Swope participated:

By so doing, and by watching Hoover in action in the sister agency, the Food Administration, they got the idea that by participating in such government authorized planning efforts, they could keep out competitors, control the market, and maximize their profits.

When Swope was named president of General Electric in 1922, he immediately set about applying those principles to the electrical lighting market.

*Swope knew that the **tungsten patent** (vital to well-working light bulbs) would **expire in 1927**.*

How was he going to maintain his monopoly?

In the free market, the only way to maintain continued dominance was to continue to innovate...

The Phoebus Cartel

In 1924, General Electric, along with several major European corporations, and with the implicit blessing of Secretary of Commerce Herbert Hoover, formed a cartel

- a cooperative group of competing firms who agreed to fix prices, share technology, establish production standards, and use common marketing practices.

By sharing incandescent light bulb patents that kept competitors out, and by agreeing on exclusive geographic spheres of influence, the member companies could maintain high market shares and high profits.

Called "The Phoebus Cartel" after the Swiss company Phoebus, they set out to keep track of all their activities around the world.

*Under the agreement, **General Electric got the United States, Associated Electrical Industries got the United Kingdom, Osram got Germany, Philips got Holland, and Tungsram got Eastern Europe**. [note : The bulb market operation continues today in Germany and some other countries, as well covered by researcher Helmut Höge in diverse publications]*

The European companies got to share the British overseas territories, and they all could compete in the rest of the world. General Electric was guaranteed that none of the other major manufacturers of incandescent light bulbs would enter the American market.

When the agreement began, General Electric had a 90 percent market share.

When it ended fifteen years later, General Electric still had a 90 percent market share.

Only a few dozen small, scrappy Japanese manufacturing companies dared to enter the American market and take on General Electric:

*They ignored General Electric and related Phoebus Cartel patents, copied what they could, and shipped their less expensive, shorter-lasting incandescent bulbs into the United States. When they began to show some increase in sales, **General Electric got its***

friends in Congress to slap a tariff on imported incandescent bulbs, and the price advantage disappeared. Japanese inroads were stopped.

When the cartel was first organized, the life span of the average bulb was 1,000 hours. Fifteen years later, when the cartel came to an end due to World War II, it remained the same.

This is not the kind of progress you would expect if the full engineering and research capabilities of General Electric had been tasked with expanding the life span.

Word in our family has always been that this was intentional:

Every 1,000 hours, you had to buy a new incandescent light bulb. Why expand the life span to 2,000 hours? You would just cut your sales in half...

Incandescents at relatively low cost (eg Aerotech 2 dollar bulbs) **lasting 20 000 hrs or more** are made for industry like mining, but kept away from ordinary consumer outlets. Ironically, some of these "rough service" type incandescent bulbs, perfectly usable domestically, are finding their way to European bargain and backstreet stores, precisely from banning the usual kind.

A further irony is that they tend to use slightly more energy for the same light output, such that the 20,000 hr 100W bulbs equate to c.75W regular 1,000 hr bulb in brightness. However the usual ones in the stores are cheaper and shorter lived albeit somewhat brighter. All this is intensely annoying German Energy Commissioner Oettinger who demanded and now apparently has got 50 inspectors to wander around and make sure people aren't buying them in normal German outlets, and is intending to expand this to the whole EU. Ah yes, how terrible if people can buy what they want.

His European Commission staff had specific talks about this with lighting industry stakeholders 2 weeks ago (November 25). A system of fines is being considered - echoing the Phoebus agreement in public-private cooperation to limit annoying outside competition - an initial Irish Government plan had already equated illegal sale or distribution of incandescents to higher class illicit drugs (beware of strange gifts), 5000 euro first offence, 50 000 euro second offence alternatively 6 months in prison.

A good European does what he or she is told.

Achieving a ban on simple incandescent light bulbs

Looking at the history, the global warming worries of the early 2000's led to green activism and a realization by the global major manufacturers that they could both make profits and improve corporate image by joining in the call for a ban. The somewhat odd image of corporate executives and anti-corporate activists singing from the same hymnsheet.

Of course, the manufacturer call for a ban on the bulbs was somewhat contradicted by their own happy enough production of the same, given, as covered before, that they regularly stop making other products (videos, cassettes, 8-track etc) in the name of progress.

An outside observer might also remark on the strange phenomenon of manufacturers seeking and **welcoming a ban on what they can make.**

So, perhaps unsurprisingly, they keep getting praised for their great altruism.

The object, then, is to get rid of the old **patent-free simple cheap and relatively unprofitable** incandescent bulbs.

The relative greater **profitability** of new lighting (despite long quoted lifespans) is also freely admitted on their sites in explaining expanded profit margins on such sales, also see interview references. Former Osram CEO replied somewhat curtly to a question "Yes they are more profitable, and it is a good thing" and he is of course right. As said before, manufacturers have every right to seek profits - but not to achieve a ban on the competition.

To see the extensive **patents** - and as it happens, patent disputes - of Philips, Osram/Sylvania and GE on fluorescent and LED lighting, simply search online, and see the manufacturer sites (history/news releases).

The problem is an enduring **popularity** of the incandescent alternatives (the contradiction with profit is only apparent, since everyone can make them, squeezing sales and profit margins for globally operative companies against local manufacturers who in turn have little overhead cost in specific simple production and distribution without trying to expand globally or do product research and development of new complex alternatives)

Therefore it is absolutely necessary to make sure no local Canadian or other manufacturer can make simple light bulbs either.

If lots of misleading energy saving and planet saving data can be put out to achieve it - so much the better.

This is a worldwide scam - and tragic in ultimately denying consumers a very simple effective technology to produce bright light.

Looking again at Europe and the USA:

In Europe the joint campaign by Philips, Osram/Sylvania and GE was driven through ElcFed, the European Lamp Companies Federation, recently renamed LightingEurope.

Susanne Hammarström of Sweden was head of **the main Brussels based PR agency Diplomat-PR engaged in the lobbying** on behalf of the light bulb manufacturers.

Translated from the largest Swedish business paper, Dagens Industri:

"The ban would never have happened, without the large and extensive lobby campaign, in all member countries, as well as towards The European Commission and the media", Susanne Hammarström says.

She believes that a voluntary switchover to energy saving lamps would have been the preferred policy, without the systematic lobbying work.

The activities are also well covered by articles, books, TV documentaries, and two films (The Light Bulb Conspiracy and Bulb Fiction), with too much to go into here, but see the site references.

Nationally, along with German coverage of Osram can be found the Dutch coverage of Philips activities, again several sources, with titles like "The Unholy Alliance between Philips and the Greens".

European Parliamentary meetings involving Environment Committee members were surprised to see manufacturer reps turning up all the time, giving lectures about why there should be a ban and so on. A member interviewed in a documentary mentioned how they even turned up in supposedly internal meetings. UK reps from Spectrum Alliance and other light sensitivity and fluorescent bulb concerned associations, or other opposing voices, were not allowed the same access.

In USA,

numerous articles and other sources cover for example how Randy Moorhead, Philips Vice President for Government Affairs explaining how the company was "involved at the very beginning" of the legislation, otherwise covering in particular the **GE influence** (given continued GE dominance on its home turf). GE involvement in federal decision making is hardly surprising also given past described history. The intimate described profitable relationship between George W Bush, adviser Karl Rove, and Jack Welch of GE is as seen repeatedly described.

Perhaps the oft-quoted anomaly of a supposed right wing President supporting individual freedom enacting the multiply electrical product choice restricting EISA law becomes less strange to understand.

A company like GE should rightly be heard, but not to the detriment of competition and consumers (and taxpayers).

The mentioned Leahy/Brandston book also covers some of this.

Congress lighting consultant Brandston was there personally, in political meetings leading up to the 2007 legislation.

"The NEMA Lamp Subcommittee was composed of General Electric, Osram Sylvania, and Philips, the same industrial giants who formed the old Phoebus Cartel (limiting lightbulb lifespans) back in 1924....

When I asked NEMA for help in fighting the incandescent light ban, I was politely told that they could not be involved in any research program like that...

[NEMA conducted its] "own internal hearings that culminated in a recommendation to ban the incandescent light bulb..."

The lighting industry influence has continued in the Obama administration. New GE CEO Jeffrey Immelt was made top economic adviser, currently chairing the advisory board. President Obama's Energy Secretary Steven Chu (recently retired) who with the President agitated for more stringent energy efficiency regulation happens to have run the lab that developed the compact fluorescent bulb (CFL).

Regarding current industrial policy and light bulb manufacturers, also see the first sections above of this text.

To end on a timely note, Philips some weeks back announced record profits from its lighting division in the new push to sell LEDs.

"We must be doing something right" their CEO said.

But whatever about the methods used, what if one agrees with the policy of targeting incandescents?

Are bans the only solution to reduce simple incandescent use and increase the use of alternatives?.....

9. Alternative Policies targeting Light Bulbs

Worldwide, remarkably little consideration is given to alternative policies, not just - as already seen - with respect to saving energy, but also with respect of saving energy when targeting light bulbs themselves.

Much the same goes for all other energy efficiency regulation.

Obviously the last section on lobbying and undue influence might - and should - raise questions as to why that may be so

There are (at least) 3 alternative policy divisions.

In a sense "there is something for everyone", as it includes both traditional left-wing and right-wing policies.

Again, this makes the avoiding of any such policies all the more puzzling.

The consideration here will therefore be on information, taxation/subsidy and market stimulation policies.

Information Policies

In the world of odd justification of banning light bulbs, we may as well throw in another one.

Politicians keep talking about uninformed consumers making the "**wrong choices**".

The right choice is of course always what the politicians want.

Be that as it may, the idea of clear **labelling** of what people buy presumably helps.

So in the USA and EU, *first* the bulbs are **banned on the basis of poor choices by uninformed consumers**, *then* clearer labelling in terms of bulb brightness comparison and energy use is introduced.

Cart before the horse. Brilliant.

The converse of this is of course that politicians - and not without justification - can say that at least they have had a lot of energy saving and switchover campaigns to encourage switching bulbs (they are even called "*energy saving*" rather than fluorescent or LED bulbs, for heaven's sake) and store displays tend to do likewise.

On top of that, Canada delayed two years with a specific consumer information rationale and to allay fears about fluorescent bulbs.

One might say that if well-informed people **still** make the **wrong** choices, they are either incredibly stupid, or, dare one say it, the ban pushing politicians are.

We are back to the reasons why people choose bulbs, which is not just to save energy,

but also not just because incandescents are cheap.

The main point - as highlighted in official and institutional studies (OEE, BC Hydro) is that the penetration of energy saving bulbs is actually pretty good, as in the USA and EU the overwhelming majority have at least one and usually more of them.

The purchase pattern simply suggests that they do not want **all** their bulbs to be the same kind.

To repeat, the campaigns to "switch all your bulbs and save money" is like saying "**Eat only bananas and save money**".

There is of course also the simple logic applying that **any success in achieving switchover**, that for example BC Hydro keeps mentioning albeit via subsidised replacements, or out of "energy saving" bulbs getting "ever cheaper and better", **also means less and less savings from imposing a ban** - which therefore in turn does not just hit "reluctant technology-fiend backwoodsmen" but also any "progressive" household who sees room and environment conditions where incandescent use is still advantageous (particularly rarely used lamps that don't warrant any unsubsidised costly LED clones either).

Again

New lighting is bought - why ban old lighting, no point

New lighting is not bought - why ban old lighting, no point

It remains strange that particularly in Canada, where a ban was delayed on informational grounds, a ban is deemed necessary for what is said to have been successfully informed consumers about their choices (even if taken as being information about "post-ban" choices, it is still consumer information about the alternatives to simple incandescents).

Assuming a nevertheless continued desire to target bulbs, we have the tax/subsidy and market stimulation alternatives.

In comparison with a regulatory ban, taxation (and/or subsidies) have several advantages apart from keeping choice.

Taxation-Subsidies

Why are simple incandescent light bulbs being banned?

They are not being banned for being unsafe to use, like lead paint.

No, the reason for banning bulbs is simply to **reduce the consumption of energy**.

After all, as regulation proponents keep saying,

"We are not banning the bulbs, we are setting energy usage limitations on them!"

Similarly with the plethora of energy usage limitations on buildings (climatically sealed), cars (performance issues, and possible safety issues, in limiting heavier types), white goods, TV sets, computers and much else, and resulting in choice limitation on varied usability/performance characteristics as per references.

Taking a "liberal" left-wing stance, **how do governments usually reduce consumption?**

Of safe products like luxury goods, or even unsafe ones, like tobacco and alcohol?

That's right - taxation.

Note the Government income from taxation to appropriately reduce energy consumption **anywhere along the usage chain**, say on **coal**, electricity from coal, any electricity, or on individual products without replacement worries, **compared** to a **pedantic multitude** of carefully crafted legislation on what consumers can or can't buy and use - and without any direct government income from it.

Taxation is of course also of popularity concern to politicians, particularly in the USA. But this can be countered with how the money is spent - at least among poorer voters - such that for example electricity price rises may be countered by home insulation schemes.

Moreover, taxing say coal (or CO2 emissions) makes renewables and other sources more attractive, and with proper grid competition the switching of suppliers is easier. As for product taxation, taxation can help subsidise the lower price of alternatives.

A quadruple whammy, in reducing consumption, equilibrating the market, keeping choice and maybe leaving some government income for other uses.

So much for "the market has failed - we must ban these products".

That's not all:

Because in **facing the inevitable grumble about the "higher price" for a targeted product, politicians can therefore counter that they are lowering the price on other products**, or similarly on lowering the price of alternative electricity provision, where subsidising renewables may be helped out of coal tax receipts.

It gets even better, in the sense that with say light bulbs, there'd be knowledge that a **ban would have been the alternative** - and the government can of course **remind** people of that too.

For a government so inclined it gets still better with the simple incandescent light bulbs, compared to other products.

They are **cheap** and can proportionate to price **absorb a fair bit of tax**, and they have a relatively **fast turnover** as commonly produced in short (1000 hr) lifespans.

I could not locate Canada relevant annual light bulb sales, but a rough estimate based on 13 million households and average 36 lighting points and somewhat less than half

relevantly incandescent and comparable pre-ban Scandinavian turnover rate would be **well over 100 million** annual incandescent sales.

Whatever, a neat little earner, even if taxing obviously reduces sales (conversely a very pro-ban government can of course equate with a ban by a large tax, but then the ban route becomes more logical except for determined buyers of the bulbs).

Bans as said give **no government income** (at least not directly - strictly, supposed household money savings from a ban can be used for other taxable consumption, but the money savings argumentation is itself dubious for reasons given, and savings are of course more indirect anyway, also in assuming people will relevantly spend the money in equal or greater taxable ways).

That is not all.

It is much **easier to implement and to alter** taxation, and easier to flexibly apply it to new products that change the market situation, than clumsy one-set-standard regulations that need to have complex bureaucratic worked-out replacements - as seen from current elaborately defined regulations.

It is also **easier to remove** taxation when deemed no longer to be needed (eg when sufficient low emission energy is available), **without having to restart the abandoned manufacture** of products, as with regulation.

Still, I am against taxation as the best alternative choice, as it assumes there is a reason to target the bulbs, and affects local industry and jobs advantages and much else for much the same reasons as bans.

There is a **still better alternative...**

Stimulation of Free Market Competition

If light bulbs **need** to be targeted in the first place (doubtful, for all other reasons given), then market stimulation, or more exactly **market competitive stimulation**, is in my view the best option **also to lower energy consumption all the way along the energy usage chain**:

Firstly, because producers of electricity, just like manufacturers, are then more keen to keep down their own energy usage and cost.

Secondly, because manufacturers are also pushed to deliver energy and cost saving products that the public actually want (and have always wanted, and do buy, even when costing more, and can imaginately be marketed for their savings in usage - rather than

to lobby regulators for easier profits through bans on cheap competition).

"Expensive to buy but cheap in the long run"?

Clothes, battery, or washing up liquid manufacturers don't look for bans on cheap alternatives.

They properly and imaginatively advertise their wares.

New inventions, new products, **energy saving or with other advantages - can always be helped to the market**, though not continually supported.

Contrary to common political propaganda, innovation does not necessitate banning what has gone before.

On the contrary, product innovation - whether with buildings, cars, washing machines or light bulbs - is proven as desirable, in direct comparison and direct competition on the market place.

A progress **seen throughout history**, also of new energy saving alternatives, **like the invention of fluorescent and LED lighting** - without regulations being present.

The proposal specifically states a reason for delaying the ban was "for further advances in lighting technology to develop".

Presumably waiting longer allows still further development, and still less reason to ban alternatives.

The retort may be that "**banning forces speedier development of new products**":

Obviously by necessity it brings new alternatives, but it is development that aims to **fill the gap** of popular incandescents - look at all the **LED incandescent bulb clones**.

Hardly true or exciting progress, now is it, hand on your hearts, Canadian politicians?

As said, **intrinsic advantages are of incandescents as bulbs, fluorescents as tubes, and LEDs as sheets**, and was the original development of the latter 2 products, before all the push to compromise them as bulbs (yes, still with advantages of their own technology, but hardly developed as such now in bulb format, eg the flexible color temperatures of **RGB LED** bulbs rather than clone LED bulbs).

A further issue is that regulation cut off standards don't just ban what exists. It bans all that **could have existed**, and never will, despite possible advantages beyond consumption of energy in usage.

For example in new bio-luminescence research, if assisted power consumption went beyond a certain level it would never be allowed, given new technology-neutral energy consumption standards.

Of course incandescent technology development itself is doomed for lack of research funding commitment on what would likely anyway be banned.

The point is not that energy saving is not good. Of course it is.

But product bans that are arguably overall and comparatively pointless in saving energy become a form of **totalitarian policy** to favour some whisper-in-the-ear multinational corporations to **force people to buy products they presumably would not otherwise buy (or the bans would not be "necessary")**, products which might indeed improve in internal competition of restricted choice but hardly as much as on an open free market against a multitude of products and manufacturers, and without the quality-for-price pressure that the continued existence of cheap alternatives would give.

Canadians like people elsewhere **spend much of their lives under artificial lighting**. There is **hardly any regulation that has such an effect on so many for so much of the time**.

How many politicians should it take to change a light bulb?

None.

How many citizens should be allowed to choose?

Everyone.

10. Incandescents - the Real Green Bulbs?

Rather than just defend incandescents as a free market choice, let's finish by playing on the same turf as the activists who keep saying they want green products. The relevant points have been expanded on before, so it also serves as a summary.

What is, and what is not, a "green" product?

M'Lords and Ladies, the case for the humble simple incandescent light bulb:

Efficient?

Certainly efficient, in making bright light using few components

Earth Saving?

Certainly sparing the earth much mining for minerals

Long Lasting?

Certainly they can last long, at least to 20, 000 hours at low price, as shown by mentioned small manufacturers, when major manufacturers don't control the markets.

Sustainable?

Certainly sustainable, in being easily locally made generic patent-free bulbs, without much transport of parts or product, and without needing recycling.

Incandescents don't burn coal and they don't give out CO2 or other emissions.

Power plants might - and might not.
If there is a Problem - deal with the Problem.

Electrical products are only indirectly coupled to any energy source use, and in turn, the main evening-night time use of incandescent bulbs really only consume small amounts of off-peak surplus capacity electricity anyway, as seen.

Power plant emissions are decreasing on present policies, both from alternative source use and in directly being reduced and treated in various ways. Small overall off-peak bulb use and coal power plant night cycle operational factors reduces if not eliminates supposed ban bulb savings, and in a country like Canada of 86% emission-free electricity a ban even increases emissions on the heat replacement effect.

Incandescent light bulbs:

A pointless very visual feel-good target for an agenda driven ban seeking to ensure that the world loses the simplest cheapest product it ever had to produce light from electricity, an aesthetically pleasing versatile invention, whose doom would arise not from being unpopular, but from being popular, through the stupidity that passes for global governance.

How Regulations are Wrongly Justified

14 points, referenced:

Includes why the overall society savings aren't there, and even if they were, why alternative policies are better, including alternative policies that target light bulbs.

(<http://freedomlightbulb.org/p/how-bans-are-wrongly-justified.html>)