



# **MERCURY LAMP RECYCLING : PROBLEMS AND SOLUTIONS 2012**

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Supreme Court Committee for  
Solid Waste Management**

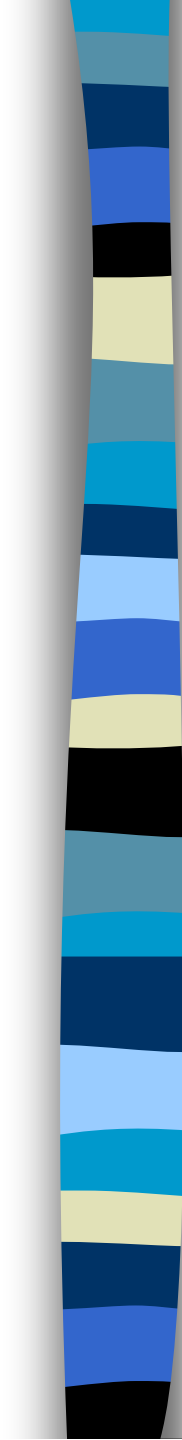
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# **INDIAN FLUORESCENT LAMPS ARE A MAJOR SOURCE OF MERCURY POLLUTION**

- One 40W tubelight contains 15-60 mg mercury; average 30mg = daily safe exposure limit for 3000 persons.
- This mercury is released within 8 hours after the tube-light caps are removed on footpaths for scrap



# **IN USA AND THE E U, TUBELIGHTS ARE HAZARD- OUS WASTE UNLESS THEY CONTAIN LESS THAN 5 MG MERCURY PER LAMP**

Disposal in haz-waste landfills is very expensive  
So E U uses mostly LOW MERCURY LAMPS.

In India, imported low-mercury lamps are only  
10-15% costlier than 20-40 mg mercury ones.

Producers claim that lack of demand is why  
they do not make (or import) low-mercury  
fluorescents in India, though all know how to.



# HOW BIG IS THE PROBLEM OF THEIR DISPOSAL?

Bangalore had 4,40,000 streetlights, with 69MW Load in 2012, not counting hoardings and tubelight-back-lit signboards, over-lit shaadi-baghs, jewellery shops and sales-exhibitions.

BBMP's power bills were 9 crores a month @ Rs 4.20 per unit + Rs 50 per connected KW

Maintenance costs were Rs 3 crores a month, all to be outsourced to 127 packages.

Street-light contractors may purchase any brand of fluorescent they like.



# **RAILWAYS AND DEFENCE ARE SIMILAR BULK USERS**

All such bulk users, including large factories, must keep their high-mercury fluorescent discards quite separate from other waste and sell or auction this separately, only to Authorised Recyclers.

This will not be necessary if only Low - Mercury lamps or LEDs are purchased and used instead.



# HOW ARE CITY'S MERCURY LAMPS DISPOSED OF?

Good news or bad?

Good news : an inexpensive Rs 25 electronic choke can give a burnt-out tube-light another 2000 hours of life. Who uses these and where?

Bad news: Burnt-out street-lights are sold to an “Agency”, e.g. 40w tube-lights are sold initially for Rs 3-4 per tube.

This is way above the scrap value of glass, plastics or metal content, so they are obviously re-sold in a scam that is countrywide.



# TUBELIGHTS ARE HOUSEHOLD HAZARDOUS WASTE

If Bangalore's 1 crore population discards just one tubelight a year, that is one crore waste tubelights in just one metro city.

With no collection system till date, these discards end up in mixed municipal dumps, puncturing very costly waste-management vehicles and equipment and contaminating all the compostable waste.



# **AFFORDABLE INDIGENOUS LAMP RECYCLING UNITS ARE NOW AVAILABLE FOR SAFE RECYCLING :**

Lamps are crushed under vacuum, mercury is adsorbed in activated charcoal, followed by dry or wet removal of phosphor coating to give clean safe glass for bulk consumption in glass-wool, glass roofing tiles or glass electric-line insulators.

The small quantities of phosphor and carbon need haz-waste landfilling unless mercury is distilled out.





# COMMUNITY LAMP RECYCLING UNITS

Mobile or skid-mounted fully-enclosed LR Units can move to city Wards or Zones for citizens to deliver quarterly their burnt-out mercury lamps for safe disposal, **which is always a Cost, never a profitable service.**

Consent to Operate these should be pragmatic and not require an expensive fixed location, because mobile Lamp Recycling Units are Preferable to current footpath decapping by waste-pickers, or throwing mercury lamps in municipal trash-containers.



# **POLLUTION PREVENTION IS BETTER THAN A CURE**

Create sufficient low-mercury tube-light demand to make it worthwhile for producers and marketers to fully phase out high-mercury lamps.

- All Urban Local Bodies and all PWD and Highway Depts must tender for and **PURCHASE** only **LOW-MERCURY FLUORESCENTS** from now on.
- Producers outsourcing their fluorescent manufacture to small units must finance their technology upgradation to produce Low-Mercury Fluorescents.



# STATE POLLUTION CONTROL BOARDS HAVE A ROLE

- They should issue or renew Consents to large housing, commercial and industrial complexes and technology parks on condition they install and permanently use **ONLY LOW-MERCURY LIGHTING FIXTURES**, so that we move forward to a less polluting future.



# PRODUCT LABELLING IS AN IMMEDIATE FIRST STEP

Bulk users will then know what to buy.

Enlightened citizens can vote with their wallets for eco-friendly products and safe and healthy homes.

CPCB must immediately negotiate this with the  
Commerce

Ministry and others indirectly involved in product  
labeling.

Compulsory-list BIS can mandate a phased switch-over  
to Low-Mercury fluorescents nationally.



# **BUYERS BIG AND SMALL CAN SAVE POWER AND AVOID MERCURY BY USING LED LIGHTING**

The slow and steady switch to CFLs is good as they have less mercury content per fluorescent.

LEDs are best as they have no mercury at all.

LED brightness and cost per lumen is improving every month, so excellent value-for-money products are now available.

An 18-w LED “tubelight” is brighter than a 40-w mercury tube-light and lasts far longer.



# MEANWHILE WE NEED A PUSH FROM LEGISLATION

Fluorescents are clearly E-waste and should be covered by the E-waste Rules if they contain over 5 mg mercury per lamp, so that Extended Producer Responsibility under Chapter II section 4 applies to these hazardous models.

They were included in Draft E-waste Rules but excluded under Schedule II exemptions by lobbyists who care more for their corporate profits than the health and safety of their fellow-humans and the environment.

It is time to remove this exemption so that Chapter V Reduction in Use of Hazardous Substances begins to apply to ALL fluorescents, even if zero-mercury content is not currently possible in fluorescent lamps as it is for LEDs.



# **WE NOW NEED EXTENDED PRODUCER RESPONSIBILITY for TAKE-BACK or RECYCLING**

All electrical dealers in India's Class 1 Cities should be required to TAKE-BACK discarded high-mercury tubelights for any similar products sold, with effect from a given date, on conditions similar to our car-battery take-back rules, with **Extended Producer Responsibility** for the reverse-distribution chain.

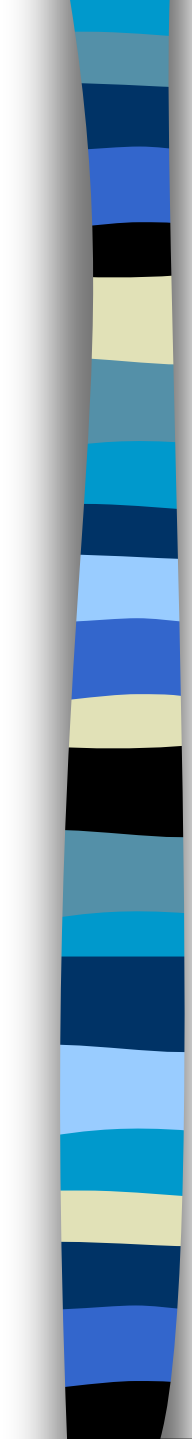


# **ECONOMIC INSTRUMENTS ARE ALSO NECESSARY**

Sales Taxes may be lowered on low-mercury tubelights.

CPCB can urge the Centre to reduce or waive import duties etc for at least three years on low-mercury tubelights to bring their costs in line with locally manufactured high-mercury ones.





# CONSULT LARGE PRODUCERS

They or their Industry Associations may be asked to make a presentation on the cost-effectiveness of low-mercury alternatives, what would equalise costs.

What has prevented them from voluntarily introducing low-mercury technology into Indian fluorescent manufacture?



**POST THESE SUGGESTIONS  
FOR PUBLIC COMMENT ON  
CPCB & SPCB WEBSITES**

**THANK YOU**

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