

# Incineration and Health Concerns...

## Where There's Smoke... There's Always Fire!

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# “If you build it, they will come!”

- If you burn it, they will cough...
- And may develop asthma, COPD, heart disease, cancers, fetal defects, genetic mutations and contaminate our air, soil water and food chains...
  - But apart from those ‘minor’ details...
- Why would you need to worry about an incinerator in Durham?

# Key health concerns

- Toxic air emissions
- Air quality degradation
- Inadequate emissions standards
- Toxic ash from incineration needs landfill
- Tainting our land, water and food chains

## Top Ten Toxic Tips

- 1. No incinerator has zero emissions – all produce toxic emissions
- 2. Including dioxins, furans, heavy metals – mercury, lead, arsenic
- 3. Ultra fine particles evade all scrubbing devices, combine with the toxic chemicals, travel huge distances and penetrate your lungs, your land, your food chain – yummy!
- 4. Many health studies link incineration with increased risks for cancer, heart and lung disease, birth defects and genetic mutations
- 5. Ontario air emissions standards are not strict enough to protect our health. (and are currently under review)
- 6. Incineration still requires landfill: at least 25% of the garbage mass going into an incinerator comes out as ash with toxic residues – requiring landfill
- 7. Tainting our land and food chains: dioxins, furans etc accumulate on land and in water. Animals eat contaminated plants, the toxins get concentrated in their fat, passed on to us in eggs, dairy and meat
- 8. In Europe, meat, dairy and eggs are tested for dioxins and similar PCB like toxins
- 9. No regulations in Ontario requiring monitoring of soil or agricultural products around incinerators
- 10. So... who's going to really look out for your health and safety?

# Air Quality

- Of all the available alternatives, thermal treatment of residual waste (incineration) has the greatest impact on airshed quality.
- Even the lobbyists for EFW and the Regions' consultants admit that
- But...
- Our airshed is already compromised!

# Air Quality

Industrial Emissions	CO	NO <sub>x</sub>	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	VOC
Clarington Totals	4392	6089	700	571	274	8703	4525
E. Gwillimbury Totals	50.2	5.1	77.1	81.9	41.2	0.3	1137.3

Metric Tonnes per year within 20KM of Clarington 01 and York Sites

Source: Step 7- Site Selection Report – Appendix A  
 Durham York Residual Waste Study  
 (the consultants' source for the data was the  
 National Pollutant Release Inventory, Environment Canada,

- Ambient air monitoring at the Courtice Road site has already shown that NO<sub>2</sub> concentrations have already exceeded MOE criteria for 20 hours between May and July 2008
- NO<sub>2</sub> is a known air pollutant with documented adverse health effects.

Acid Gases  
(e.g. SO<sub>2</sub>, HCl,  
NO<sub>x</sub>)

Unknown  
Compounds

Fine and Ultrafine  
Particulates

What Goes Into The Air?

Heavy Metals  
(e.g. Lead,  
Mercury)

Other  
Greenhouse  
Gases

POPs  
(e.g. Dioxins,  
Furans)



# The Health Effects of Waste Incinerators

4th Report of the British Society for Ecological Medicine

- **Toxic metals accumulate in the body and may cause emotional and behavioural problems in both children and adults.**
- **Fine particulate air pollution causes increases in all-cause mortality, cardiac deaths and lung cancer deaths as well as asthma and chronic lung disease.**
- **The fetus, infant and child are most at risk from incinerator emissions.**
- **Large studies have shown higher rates of adult and childhood cancer and also birth defects around municipal waste incinerators.**

- **2008 CMA Report Warns: Poor Air Quality Killing Canadians**
- **The Canadian Medical Association released staggering new data showing that this year alone as many as 21,000 Canadians will die prematurely from the effects of air pollution. While most of those deaths will be due to chronic exposure over a number of years, almost 3,000 will be the result of acute, short-term exposure.**
- **The CMA's report, 'No Breathing Room: National Illness Costs of Air Pollution', shows the effects of poor air quality based on the concentrations of two highly predictive pollutants - ozone and particulate matter - on four distinct age groups of Canadians.**

## Definition of the Precautionary Principle:

The most broadly accepted definition of the Precautionary Principle is Principle #15 of the June 1992, Declaration of the Rio Conference on Environment and Development.

This definition of the precautionary principle is currently enshrined in the 1999 Canadian Environmental Protection Act (CEPA 1999):

“Whereas the Government of Canada is committed to implementing the precautionary principle that, where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.”

# But they do it all the time in Europe, don't they?

- **Yes...and no!**
- **French, Italian, Irish and British doctors associations all opposed**
- **The Paris Appeal 2004: hundreds of scientists, 200,000 doctors, and the medical organizations of the 25 EU Member States in the Standing Committee for European Doctors which represents 2 million European doctors– are all signatories**
- **The Memorandum for the Paris Appeal 2006 - 164 measures drawn up by 68 international experts calls for a moratorium on the building of any new incinerators**
- **Health risks are not yet completely understood, but potential for harm is high**
- **'Best' technologies have either failed or proved too ruinously expensive to keep going**
- **No incineration process is clean: none eliminates creation of harmful material into the air, especially ultra-fine particles, no matter what the industry says**

# Appeal from the health and healthcare sector against the reclassification of incineration in the WFD

*11 June 2008*

...we, the undersigned physicians and Associations, ...therefore oppose the reclassification of “efficient incineration” as recovery.

...Several recent studies of wide samples of population continue to reveal the threat that incinerators pose to human health in Europe and around the world.(2) Ultrafine particles emissions are still not monitored anywhere in Europe, even though the danger these particles pose is well documented.(3)(4)

We are also concerned about the image that the EU is giving to the rest of the world by being a resource-burning economy.

We therefore ask the European Parliament to reconsider its decision regarding the reclassification of incineration and stick to its first reading position, which we believe will do far more to preserve children’s health and the health of future European generations. We, the undersigned organisations, represent over 33,000 doctors.

Signed,  
ISDE International Society of Doctors for the Environment,

# How is Health Risk Assessed?

- Epidemiological Studies
- Risk Assessment
- Biological Monitoring

# EA Health Studies

- Generic Human Health Environmental Risk Assessment (GHHERA) -May 2007
- Review of GHHERA – Aug. and Sept. 2007
- April 1, 2009 Regional Council approved “bare bones” Environmental Surveillance recommended by consultants, but left door open to adding more monitoring
- Upcoming Site-Specific Risk Assessment – May 2009?

# The Region's Consultants

- While working on this EA, consultants were members of the Canadian Energy-From-Waste Coalition, a group promoting incineration
- Can we be certain that the consultants have conducted an independent and unbiased assessment?
- Peer reviewer commissioned by Durham Medical Officer of Health has provided opinions that appear to be contradictory?
- What advice will our Medical Officer of Health provide to Durham Regional Council?
- The Halton Region Medical Officer of Health recommended a precautionary approach; their Council voted unanimously to shelve EFW plans



# Monitoring the Incinerator

- Consultants recommended:
- Stack monitoring only (once a year, with advanced notice, not performed by MOE)
- No ambient air, no soil, no vegetation, and no agricultural product testing
- No human biomonitoring

Regional Council has accepted their recommendation – which leaves us how safe, exactly ?

# Economics and Energy

- Energy return from EFW is small
- More energy saved by better waste diversion
- Cost \$200 million ( Durham's share \$155 million) – from Fed's gas tax transfer?
- Imagine how much more could be done for the Region with that money: infrastructure, transit, affordable housing etc
- EFW is not sustainable and diverts our energy and money away from more sustainable and better practices, especially with respect to health and environment

## Health Risks Summary

- Incinerators may seriously damage your health
- If you don't smoke cigarettes, why would you let the Region blow toxic smoke into your childrens' lungs, expose your neighborhood to toxic particles, carcinogens, heavy metals, greenhouse gases and contaminate the soil and water, too?
- Halton region shelved their EFW plans...we should too
- Apply the 'Precautionary Principle'...they did
- No incinerator is 'clean'
- Incineration is a terrible step backwards in dealing with our waste problem
- Start at the front end instead
- Reduce, reuse, recycle –aim for zero waste – Markham did!
- Saves energy, money and ...your health!

So next time you're offered a  
'smoke' by the Region...

- **Just say 'No !'**
- ( 60 of your local doctors have too!)
- Thank you!
- Dr Sean Godfrey