

# **DEBUNKING THE MYTHS OF INCINERATION**

**Presented to:**

**REGIONAL COUNCIL OF DURHAM**

**Prepared & Presented by:**

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## RECORD OF UPDATES

### November 22, 2007

Addition of two new sections:

- "You don't understand the whole issue so don't jump the gun."
- "Let's see what the site specific / technology specific risk assessment says before we decide what the risks are."

Expansion of two sections:

- My Motion
- Conclusions

Also, correction of some typing errors

### January 29, 2008

- Page 67, correction, per capita numbers, CO<sub>2</sub> emissions Sweden and Canada
- Page 67, points added about Sweden's taxing of incineration and their diversion rates.

### May 5, 2008

- Correction made in several places in the report regarding information from Drs. Jeremy Thompson and Honor Anthony that 88 to 90% of chemicals and pollutants in incinerator emissions are unknown. The correct statement from the doctors is that the *effects* of 88 to 90% of chemicals and pollutants in incinerator emissions are still unknown.<sup>1</sup>
- On page 68, addition of Swedish emission numbers from 2006.
- Added the following new appendices, all of which provide further evidence to the negate the myth, ***We have to trust the process***: Appendix 7, Complaint to the Environmental Commissioner of Ontario - Cover Letter, Appendix 8, Complaint to the Environmental Commissioner of Ontario - Details of Complaint, Appendix 9 - Letter to Clarington Council and Appendix 10, Responding to the Region.

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## CREDITS

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Thank you to my other half, Bruce, for his support, mutual righteous indignation and for putting up with all of those fast food suppers.

Thank you to my friends Donna and Maureen, who listened to all of my incinerator stories with patience and fascination! Thanks for proofing too, Donna.

Thank you to KT Tunstall for her song, *Eye to the Telescope*. It was these lyrics that finally got me moving:

The fire fades away  
Most of every day  
Is full of tired excuses  
But it's too hard to say  
I wish it were simple  
But we give up easily  
You're close enough to see that  
You're the other side of the world to me.

"He who thinketh he leadeth and hath no one following him is only taking a walk."  
John C. Maxwell



"We recommend that no further waste incinerators be built."

*Dr. Jeremy Thompson  
Dr. Honor Anthony  
4<sup>th</sup> Report of the British Society of Ecological Medicine (4)*

"If incineration is the answer, then somebody asked the wrong question."

*Friends of the Earth  
Incineration and Health Issues (30)*

"The message is a simple one. As far as genuine sustainable solutions are concerned, the future belongs to those in local government who put their faith in people, not magic machines."

*Dr. Paul Connett & Bill Sheehan (13)*

## **INTRODUCTION**

As I sit here at my computer, I feel a great sense of relief that, other than this introduction, all I have left to write for this report is the conclusion. The end is in sight which is a good thing because it is Tuesday, November 20 at 5:05 a.m. and I have to have this report ready for tomorrow's Regional Council meeting.

There were many times through the researching and writing of this report that I thought I must be out of my mind. I don't know how many hours I have spent on this but I can tell you that I gave up counting after I hit 100. It is only by sheer luck (or fate?) that my business commitments have been quiet over the past few weeks and that I have had time to work on this project. Each time I was ready to throw in the towel, I remembered my motivation – which is to stop the incinerator. That kept me going. That and Diet Coke. (I don't drink coffee so the caffeine has to come from somewhere!)

Why am I doing this? Because all of my life I have felt that it isn't enough just to live for oneself. You have to help others. I guess that philosophy explains my social work career. When I was doing front-line social work, I often felt that I was a band-aid for much larger issues that should be tackled. Now once again I have stumbled upon one of those larger issues – an issue that I never would have thought six months ago would be taking over my life.

But having lived with chronic illness, I decided some time ago that I would do everything possible to help other people stay well. That is one of my main motivations for fighting this incinerator. Despite the time and frustration that are part and parcel of the process, I will continue to fight on if doing so means I can stop even one person from getting sick.

In my work history, I have also seen the impact that illness has on the lives of real people – just about everything you could imagine, I have seen. More than anything I have been empowered by the sheer strength and resolve of the people who face much greater hurdles than I ever will, while still managing to come out it smiling. I feel I owe it to them to do everything I can in this fight.

So here I am. Here is my report. Please, don't be intimidated by the length. I have set up this document so that you can read it in pieces when you have a block of time – be it a few minutes or a few hours. I have also included both a general and a detailed table of contents to help when you want to skip forward to specific sections. (Keep in mind the categories I have used are not mutually exclusive; there is some overlap.)

You will notice that I have organized the main content of this report in the form of countering the typical arguments used to support incineration. I have done this because I wanted to produce a tool that could be used to challenge the pro-incinerator folks head on. It is my hope that you will feel free to use the ideas that I present here to fight the good fight. I only ask that you respect my copyright and that credit is given where credit is due.

You will notice that I write very much like I talk. This is my style and I have always found it to be effective regardless of the mode of communication. If you are used to more 'official' documents full of jargon, please don't dismiss what I write here. I am only trying to make this information accessible to as many people as possible.

For your information, I have PDF file copies of every single one of the 275 references listed in my bibliography. If you would like copies of any, or all, of these publications, please just let me know and I can send them to you by email. I will also include copies on the flash drive that I will hand in to the Clerk.

It is my sincere hope that this document will help the incineration discourse become an honest and open one – because so far, this has not been the case.

Thank you for considering this work.

Sincerely,  
Kristin D. McKinnon Rutherford, HBSW, MSW

## **WE HAVE TO DO THIS NOW, WE HAVE NO CHOICE, MICHIGAN IS CLOSING AND THIS IS A CRISIS!**

As part of my research for this report, I downloaded and read through every article printed in the local This Week newspaper about the proposed incinerator<sup>2</sup>. I noticed rather quickly that there has been, throughout the incinerator 'debate', more than one double standard at play. When community citizens express their concerns about incinerator emissions and the effects of those emissions on the health of our community (very valid concerns as you'll see as you read through this report), they are accused of using scare tactics. Yet when our own politicians and Durham Region staff threaten that the "clock is ticking" and a "garbage crisis" is looming, they are not scare mongering.

Consider these comments from Clarington Mayor Abernathy and Durham Region Chair Roger Anderson, respectively, quoted in the local This Week newspaper:

"In 2010 the border is closed and if we don't have a resolution to deal with our garbage by that time we are going to be in big trouble."<sup>3</sup>

"It would be pretty easy to sit in front of all these folks... and say, OK, I'm not going to be a willing host,' he said. 'Easy to say now but I don't know what you're going to say in 2011 because you're not going to have an answer."<sup>4</sup>

Aside from the obvious double standard, these comments are based on the assumptions that:

1. There *is* a garbage crisis.
2. The *only* choice to solve the garbage crisis is to build an incinerator.

Assumption # 2 is tackled in just about every other section of this report. So let's tackle the first one.

### **IS THERE A GARBAGE CRISIS IN DURHAM REGION?**

The answer to this question depends partly on how you define a crisis. For the Mayor and Mr. Anderson, the crisis is not having anywhere to put the garbage. For me – and many other citizens of this Region, it would seem - the crisis is that we are considering an incinerator as an answer to the 'garbage problem.' So whose idea of a crisis overrules?

For now, let's assume that everyone else is wrong and that the Mayor and Mr. Anderson might be on the right track. Let's look at the reasoning behind our so-called garbage crisis in Durham Region.

If we are indeed experiencing a garbage crisis, wouldn't you assume that Durham Region has been doing everything that can be done to divert as much waste as possible from landfill? After all, every report and promo about the incinerator refers to 'residual waste' to be burned in the incinerator – that is, waste that is left over after diversion (i.e., recycling, composting and so on). And remember - many local and Regional politicians - along with Regional bureaucrats - have demonized the evil landfill,<sup>5</sup> so surely diversion has been a priority for some time in Durham Region.

Keep in mind, as well, that Durham Region completed its Long Term Waste Management Strategy Plan in the year 2000<sup>6</sup> and incineration was already on the table as a possible solution to the garbage problem.<sup>7</sup> We have had seven years – almost eight – to make sure that diversion in Durham Region has been maximized.

But has it been?

### **What isn't recycled in Durham Region (but is in other places)**

Following is a list of items that are not recycled in Durham Region<sup>8</sup> but are in many other communities in Ontario and beyond.<sup>9</sup>

Aluminium foils and foil containers	Berry containers
Clam shell containers	Coffee cup lids
Egg cartons (clear & Styrofoam)	Fabric (textile recycling)
Foam trays	Foil pouches / packets
Light bulbs	Meat trays
Milk bags	Muffin & bakery / delicatessen containers
Plastic bags	Plastic film
Plastic plant pots	Plastic plant pot trays
Styrofoam	Rags (textile recycling)
Plastic take out food containers	
Plastic wrap (for example, outer wrap on a paper towel or toilet paper)	

When looking at this list, it is interesting to note that the majority of items are made of plastic, an observation also reached by Durham Region staff member, Mirka Januszkiewicz.<sup>10</sup> The relevance of this observation will be looked at more closely in the section of this report entitled, *We have to trust the process*.

Looking at the above list, we have to ask the obvious question - If these items are recycled in other Ontario communities, why aren't they recycled in Durham Region – especially when we are in the middle of a garbage crisis?

## **That elusive market demand**

One possible answer to the above question is that there is not enough demand in the marketplace for the items that we don't recycle. This would seem to be an odd answer to the question, though, since you'd assume that other communities recycling these items have found markets for them. Not wanting to assume, however, I did some investigating.

On October 19, 2007, Durham Region ran an advertisement in the local This Week newspaper called, Out of the blue box. The ad listed six items that are not to be included in blue boxes, "because there is not enough demand in the marketplace for them."<sup>11</sup> The items listed were berry containers, muffin trays, plant pots and trays, clam shell containers, Styrofoam and oversized plastic jugs.<sup>12</sup>

Besides the oversized jugs, I have been able to determine all of the items on this list are made from either #1 or #6 recyclable plastics.<sup>13</sup>

### ***A closer look at # 1***

According to my research, the demand for # 1 plastic exceeds the current supply<sup>14</sup> and #1 plastic is the "second most valuable item in the blue box."<sup>15</sup> Using the recycled plastic market database that I found online<sup>16</sup>, I was able to locate 29 Ontario buyers of #1 plastics that have been collected through recycling programs (there are also buyers in the US).

Of these 29 buyers, 15 recycle 'other rigid applications' of the plastic (in addition to water bottles and plastic film), which would include such items as clamshells, bakery containers and fresh food take-out containers from the supermarket. Of note, 17 of these companies recycle film applications as well, indicating that there is a market for recycled plastic wrap, bags and packaging - none of which Durham Region currently recycles.

I found it interesting that of these 29 buyers, 25 take industrial / pre-consumer scrap and 15 take post-consumer industrial, commercial and institutional materials. Considering that 2/3 of waste in Ontario is industrial, commercial and institutional,<sup>17</sup> Durham Region could take a significant dent out of its 'waste crisis' by taking advantage of these recycling opportunities. Yet, Durham Region businesses are expected to manage and to pay for their own recycling<sup>18</sup>; this is not the case in many other regions.<sup>19</sup>

It would appear that the assertion that # 1 plastics are not recycled in Durham Region because there is not demand for them is false. So, why aren't they recycled?

### **A closer look at # 6**

My investigation of the market demand for #6 plastics started with a visit to the website of the Canadian Polystyrene Recycling Association.<sup>20</sup> According to the Association, they recycle all #6 plastics, including traditional Styrofoam (cups, plates, meat trays, packing materials, etc.) as well as clear rigid plastics, such as some bakery, delicatessen and clam shell containers. The company has been recycling #6 plastic products since 1991 – for 16 years.<sup>21</sup>

I found this information surprising, since the Durham Region ad stated very clearly that these #6 plastics have no market demand.<sup>22</sup> To corroborate the information on the website, I placed a call to the Association and spoke to the director, Mr. Joe Desousa.

When I explained the Durham Region ad to him, and asked if the claims of ‘no market demand’ were true, Mr. Desousa was quite shocked. He told me a number of times during our conversation that the claim of ‘no market demand’ is false. He explained that there is very high market demand for # 6 products, particularly Styrofoam, which the Association, “...can’t get enough of.” Mr. Desousa also informed me that the City of Toronto will be coming on board in 2008 and will be collecting # 6 plastics.

It would appear that the assertion that # 6 plastics are not recycled in Durham Region because there is not demand for them is false. So why aren’t they recycled? And why has Durham Region been sending them to landfill for 16 years when we are in the wake of a garbage crisis?

### **What about what’s left over?**

It would be reasonable to ask, if Durham Region *did* recycle #1 and #6 plastics, what we would do with the trash that is left over. See Appendix 5 for a list of non-recyclables along with a list of alternatives to disposal by landfill or incineration.

(Please also see the sections, *Zero-Waste Strategies are Impossible / impractical and There are no Alternatives to Landfill.*

## ZERO-WASTE STRATEGIES ARE IMPOSSIBLE / IMPRACTICAL

“This utopian view [of zero waste] is a long way off. But the changing economics of waste disposal, technical advances, and grass roots activism – along with the feverish desire of big companies to appear green – are bringing it closer than you might think.”

*Fortune magazine (41)*

“Given that we have been able to land men [sic] on the moon for the past 30 years, it should not be beyond us to recycle our reusable products such as paper, glass, textiles, metals and compost materials.”

*John Scot, Member of Scottish Parliament,  
Conservative, Ayr, quoted in (31)*

“Society’s task is not to find a new place or a new machine in which to put the trash, but to find ways of not making waste in the first place.”

*Dr. Paul Connett (12)*

### WHAT IS ZERO WASTE?

The Zero Waste philosophy recognizes that the real crisis is not a waste crisis but one of overproduction and overconsumption, coupled with a disconnect from the consequences of these activities on the real world.<sup>23</sup> The Zero Waste movement strives to bridge that disconnect and to educate citizens, business and government about how they can make a difference by reducing (preventing waste), reusing, recycling and composting. And the best part of the Zero Waste concept is that it embraces citizen participation and buy-in, which in turn produces local economic opportunity and local jobs.

Zero Waste works for everyone. It creates jobs and local businesses - which collect and process secondary materials into new products - while also offering major corporations the opportunity to increase their efficiency, decrease their demands on virgin products (i.e., natural resources) and look better while doing it.<sup>24</sup> If you want to see examples of the Zero Waste philosophy in action – even if the initiatives aren’t called exactly that – just read through the next section. After doing so, I think you’ll find it hard to dispute that the Zero Waste philosophy works.



## **Making Zero Waste Work**

We can benefit from the experiences of communities all over the world – many in Europe – in implementing the Zero Waste philosophy. Zero Waste advocates stress the following components to ensure success:

- Set a target year.<sup>25</sup>
- Adopt a non-incineration discard management plan.<sup>26</sup>
- Ban key items from landfill.<sup>27</sup>
- Place a surcharge on items landfilled.<sup>28</sup>
- Decentralize waste management.<sup>29</sup>
- Target a wide range of materials for re-use, recycling and composting and keep those items segregated from mixed trash.<sup>30</sup>
- Compost.<sup>31</sup>
- Make program participation meaningful and convenient.<sup>32</sup>
- Design a program with the whole community.<sup>33</sup>
- Institute economic and other incentives that reward waste reduction and recovery over disposal.<sup>34</sup>
- Enact or push for policies and regulations to improve the environment for recycling and recycling-based businesses.<sup>35</sup>
- Develop markets for materials with an eye toward closing the loop locally, producing high-value end products and linking recycling and economic development with a larger vision of sustainable community development.<sup>36</sup>
- Work to hold manufacturers responsible for products throughout their lifecycle.<sup>37</sup>
- Educate, educate, educate, outreach, outreach, outreach.<sup>38</sup>

## **Why Don't We get it?**

When speaking to local and regional council, many citizens have raised the concept of Zero Waste as an alternative to incineration and landfill, and a solution to Durham Region's so-called waste management crisis (see section, *We have to do this now, We have no choice, Michigan is closing and this is a crisis!*). The response to this suggestion from many regional politicians and staff members has been at best, sceptical and at worst, downright patronizing. Consider this comment from Cliff Curtis, Commissioner of Works at Durham Region, quoted in a May issue of the This Week newspaper. Mr. Curtis was explaining why he refused to debate in a public forum with those who have taken a stand against the incinerator project:

"I am willing to educate the public but I am not willing to get into a knock-em-out debate with people," Mr. Curtis said. "Naysayers are coming from a position that they are very passionate about, but there's little practicality to it."

Being an advocate of Zero Waste myself, I find Mr. Curtis' comment quite funny. If there is anything that I have never been accused of, it is being impractical...but I digress.

Perhaps the problem here is that nobody has taken the time to explain the Zero Waste concept. Or perhaps it has been explained but some regional politicians and Durham staff members have not been listening. It is hard to say because I haven't attended every single regional council and committee meeting over the past few years. But I think opposition to Zero Waste comes down to this: **Those who dismiss the concept of Zero Waste are taking it much too literally. Zero Waste is not a destination, it is a journey.** Including 'Zero' in the name illustrates the *vision* of the movement and gives inspiration to those who embrace its philosophy. And *vision* is a vital component to the success of any endeavour.

Beyond not understanding Zero Waste, there has been real evidence that some politicians and other folks involved in pushing the incinerator agenda are not even listening. Look at what Clarington Mayor, Jim Abernathy and David Climenhage (sorry, I am not sure who this fellow is but he was quoted in This Week as well), respectively, had to say:

"The fact is that 30 to 40% of our garbage cannot be recycled..."<sup>39</sup>

"Germany put in one of the most extensive producer responsibility systems ... but after the system was implemented, what they found was that they had huge and growing stockpiles of materials that could not be recycled. I don't think that necessarily a zero-waste solution is something that can happen without many years and many new technologies in place to achieve it." <sup>40</sup>

Here is my response to both of these comments:

**To Mayor Abernathy:** This is simply not true. Markham Region has diverted more than 70% of its waste in the past two years and predicts that it will reach 95%<sup>41</sup>. If you do the math, it would seem the Markham Region is on its way to diverting all but 5% of its waste, which is a far cry from the 30 to 40% that Mayor Abernathy quotes. There are many other communities who have gone beyond the 60 to 70% rate of diversion that Mayor Abernathy states is the absolute maximum possible. Read on!

I would be remiss not to point out here that an incinerator does not make waste disappear. Even if Mayor Abernathy were correct, it is estimated that 25 to 40% of the weight of garbage burned in an incinerator is left over in ashes.<sup>42</sup> Considering this information and not even counting the multitude of benefits that Zero Waste offers, how is it that incineration is any better a solution?

**To Mr. Climenhage:** Assuming that this comment is true – and one cannot simply because you said it and it appeared in the newspaper (read the section, *You have to trust the process* for the reasoning behind this comment) - your example is an *endorsement* of Zero Waste, not a condemnation. As I suggested when I presented to Regional Council on October 31<sup>st</sup>, we can learn from Germany and not make the same mistake. The first materials that Durham Region needs to target with an Extended Producer Responsibility / waste prevention initiative are those materials that are stockpiling in Germany and cannot be recycled.

As far as Mr. Climenhage's comment about it 'taking years' to reach Zero Waste, consider these facts. Durham Region decided on incineration as their "ultimate waste solution"<sup>43</sup> in the year 2000,<sup>44</sup> just under 8 years ago. Nova Scotia put their new waste management strategy into place in 1996 and by 2004 – 8 years later - had received world renown for their waste management accomplishments.<sup>45</sup> Imagine what Durham Region could have accomplished in those 8 years that it has been trying to convince its citizens to embrace incineration.

## **Examples of Excellence**

I see no better place to go now than to illustrate the success of a number of communities from home and around the world who have embraced the Zero Waste philosophy. The percentages refer to the percentage of waste diverted from landfill and incineration to reducing, re-using, recovery and composting.

**Italy** – In only 3 years, the number of municipalities in Italy with over 50% diversion rates have doubled, numbering more than 1,000.

Novara 70%<sup>46</sup>

Bellusco 73%<sup>47</sup>

Treviso Province 77.5%<sup>48</sup>

Gazzo 81%<sup>49</sup>

Cappannori 82%.<sup>50</sup>

**New Zealand** – 40% of its municipalities adopted Zero Waste Goals as of 2001.<sup>51</sup> Opotiki District, New Zealand reached a diversion rate of 85%.<sup>52</sup>

**Canberra, Australia** - Adopted a No Waste by 2010 goal and plan in 1996. Since 1995, recycling has increased by 80%.<sup>53</sup>

**Del Norte County, California** – First County in the US to adopt a comprehensive Zero Waste plan (in 2000).<sup>54</sup>

**Seattle, Washington** - Adopted the Zero Waste guiding principle in 1998.<sup>55</sup>

**Santa Cruz County, California** - Adopted Zero Waste as a long-term goal in 1999.<sup>56</sup>

**Zabbaleen-served areas of Cairo, Egypt** – 85% diversion rate.<sup>57</sup>

**Netherlands** – 72%<sup>58</sup>

**East Prince, PEI** – 69%<sup>59</sup>

**Northumberland County, Ontario** – 69%<sup>60</sup>

**Oshawa, Ontario** - City Hall in Oshawa has reduced their in-house waste substantially and achieved a diversion rate of 90%.<sup>61</sup>

**Whitby, Ontario** – 68%<sup>62</sup>

**Markham** - 70% and expects to hit 95% in next few years<sup>63</sup>

**Eastern Ontario** - Belleville, Sidney and Trenton, Ontario work together with a dozen other municipalities to promote a blue box program recycling 20 different materials. Through this partnership Belleville has accomplished a 63% diversion rate, Sidney 69% and Trenton 75%.<sup>64</sup>

## **THERE ARE NO ALTERNATIVES [TO INCINERATION]**

“...to introduce an approach that takes into account the whole life-cycle of products and materials and not simply the waste phase, and to focus on reducing the environmental impacts of waste generation and waste management, thereby strengthening the economic value of waste. Furthermore, the recovery of waste and the use of recovered materials should be encouraged in order to conserve natural resources.”

*Council of the European Union (256)*

“There are now alternative methods of dealing with waste which would avoid the main health hazards of incineration, would produce [or save] more energy and would be far cheaper in real terms, if the health costs were taken into account.”

*Dr. Jeremy Thompson & Dr. Honor Anthony  
British Society for Ecological Medicine (4)*

“Advances in the collection of solid waste and recyclables are only one piece of recycling’s economic success. Recycling has also made a vital contribution to job creation and economic development. Recycling creates or expands businesses that collect, process and broker recovered materials as well as companies that manufacture and distribute products made with recovered materials.

Numerous studies have documented the billions of dollars invested and the thousands of jobs created by recycling.”

*US Environmental Protection Agency, quoted in (34)*

When I made my presentation to Durham Region Council on October 31, 2007, one councillor prefaced his question to me by commenting that I was the first delegate to actually offer alternatives [to incineration]. I have heard stories from other delegates of frustrated councillors and bureaucrats demanding alternatives or stating, simply, that there *are* no alternatives to incineration.

Even the local paper touted the “no alternative” line – for example, the May 3<sup>rd</sup> issue of the local *This Week* included an article entitled, *Region has little alternative to incineration*.<sup>65</sup>

My research indicates a different reality ... that there *are* alternatives to incineration (and to landfill, for that matter) but that these alternatives haven’t been considered. The simplest way for me to back up such an argument is to point you to the section about our garbage crisis (*We have to do this now, We have no choice, Michigan is closing and this is a crisis*), in

which I show that Durham Region hasn't even embraced the basic recycling alternatives that are available to us.

In this section I will highlight some of the other alternatives to incinerators and landfill. These alternatives more than aptly illustrate that the "no alternatives" statement is simply not true.

To be able to truly appreciate the alternatives to the disposal of garbage – whether in a landfill or in an incinerator – you have to begin with one of life's simplest remedies: prevention. Rather than worrying so much about how to get rid of garbage, we need to look much more closely at how to prevent its creation in the first place.<sup>66</sup>

We also need to be able to look at waste and the challenges it presents in a different light. Instead of looking at waste as something to be disposed of, we need to look at it as a resource - as something of value to be saved and from which we can benefit.<sup>67</sup>

When we are able to shift perspectives, amazing opportunities arise – not only do we find solutions to the 'waste problem' but we encourage community buy-in, local jobs and local economic development. What could be better than that? Certainly not an incinerator.

### **EXTENDED PRODUCER RESPONSIBILITY (EPR)**

Embracing Extended Producer Responsibility is one very effective way to prevent waste.<sup>68</sup> Extended Producer Responsibility ensures that those who manufacture, distribute, sell and buy products take responsibility for those products from the beginning to the end of their use.

EPR initiatives embrace waste management methods that either prevent or reduce waste and destroy or detoxify hazardous waste. These methods include:

- Less packaging.
- The reduction or elimination of one-time, short-time or disposable products.
- Avoiding the use of toxics in all production (i.e., products and packaging).
- Composting.
- Source segregation and recycling.
- The use of a new generation of chemical or biological destruction methods (which don't produce toxins themselves) for the disposing of hazardous waste.<sup>69</sup>

Extended Producer Responsibility is not a new idea. It was formally introduced by Sweden in 1979<sup>70</sup> and was first mandated by law in Germany in 1999<sup>71</sup>. EPR policies in Europe, "have led to company recycling rates close to 90% and high recycled content, as well as an emphasis on reusable and returnable packaging."<sup>72</sup>

Extended Producer Responsibility includes not only creating better products but also better packaging - the fastest growing source of non-recyclable waste today.<sup>73</sup> Inherent to the concept of EPR is that the choices we make affect the world around us - and taking more responsibility means making better choices for that world.

Although EPR focuses on producers, distributors and retailers, it is important to note that citizens also play a role by taking responsibility for their purchases [and the waste that those purchases create]. In a time where more and more disposable items (like Swiffers, Wipes and Magic Erasers) seem to be flooding the market, it is vital that citizens realize how important it is to be conscientious consumers.<sup>74</sup>

### **EPR in action**

Following are several examples of successful EPR initiatives.

#### ***Japan***

Japan has established a non-profit organization called the *Japan Container and Package Recycling Fund* which is responsible to carry out a number of Japan's EPR initiatives. Business members must pay into the fund based on the volume of packaging they produce and the total capacity of plants available to recycle that packaging. In effect, member companies transfer their recycling obligation to the fund by paying fees.<sup>75</sup>

Japan has also adopted the SHAR law, which divides responsibility for products among producers, importers, retailers, local governments and consumers. Rather than being disposed of in landfills, old products must be taken back by the retailers who sold them. Manufacturers and importers must assume 'physical responsibility' for the old products, including collecting and recycling their old products. Financial responsibility for recycling appliances falls on consumers so that they will learn how much it costs to throw something away.<sup>76</sup>

### ***South Korea***

South Korea has adopted EPR initiatives such as a deposit-return system, non-refundable production fees, specific design requirements for packaging and restrictions on the production of disposable goods. South Korea has also put into place eco-labelling, whereby companies who meet certain standards in production, packaging and other elements of doing business can qualify to include eco-labelling on their product. The benefit of eco-labelling is that it appeals to the priorities of many consumers.<sup>77</sup>

Unlike in US, Europe and parts of Canada, it is the producers and not consumers who are responsible for the deposit refund system through payments into a Special Account for Environment Improvement. Companies can recoup dollars back from the fund based on their success rate in collecting, treating and recycling the waste that they produce.<sup>78</sup>

The Government of South Korea has set up a corporation to oversee this initiative as well as to collect and sort some recyclables, enforce recycling laws, develop new recycling capacity through research, build recycling centres, construct processing and manufacturing facilities, and provide financial and technical support for private sector recycling industries. Excess dollars from the fund go to support recycling collection at local government offices, schools, military units and community organizations.<sup>79</sup>

### ***Other Asian Initiatives***

Taiwan has established return systems and mandatory product take-backs, along with eco-labelling to encourage companies to design and supply environmentally friendly products. China has banned the use and production of polystyrene (Styrofoam) disposable food containers while India banned the use and sale of plastic bags less than 20-microns thick. Numerous levels of government in Nepal have joined a campaign to eliminate plastic waste and the Philippines passed a new law that bans all disposable packaging.<sup>80</sup> The Philippines is also the first country in the world to ban all methods of incineration.<sup>81</sup>



### ***Ottawa, Ontario***

In Ottawa, over 350 local businesses participate in Retailer Take Back, a successful program in which retailers take back 65 toxic and difficult-to-recycle products – such as motor oil, batteries, consumer electronics and prescription drug containers - from customers. Retailers want to be involved in the program because of the free publicity that draws customers to their stores.

The ultimate goal of this initiative is to put pressure on manufacturers to reduce waste and packaging. Consumers learn that we don't have to keep cleaning up after industry. Retailers - who by participating learn how much waste is generated by the products they sell - begin to put pressure on manufacturers to take responsibility for their products to end of life.<sup>82</sup>

### ***Halton Region, Ontario***

Through the Take it Back initiative, local government and retailers encourage consumers to return shopping bags to local outlets for recycling. Although the plastic bag is the first item targeted through Take it Back, more retailers will be involved and others items collected for recycle, including cell phones, fluorescent light bulbs, pharmaceuticals and batteries.<sup>83</sup>

The list of Halton retailers participating in the program is impressive: A & P, Dominion, Food Basics, Fortinos, Home Outfitters, Loblaws, Longos, Price Chopper, Real Canadian Superstore, Sobeys, The Barn Fruit Markets, The Bay, Ultra Food and Drug, Wal-Mart Canada, Whole Food Market and Zellers.<sup>84</sup>

### ***Port Perry, Ontario***

Featured recently on the CBC television show, Marketplace, the community of Port Perry mobilized to collect used batteries and deliver them to a recycling facility in Southern Ontario. Although a Durham Region recycling depot is set up outside of town to collect the batteries, residents indicated that it was 'too far out' and simply stockpiled their old batteries at home.<sup>85</sup>

Encouraged by a competition facilitated by Marketplace and the hands-on involvement of the town's Mayor, local schools educated their students about the dangers of used batteries in landfills and the value of mining metals from the recycled batteries rather than having to mine them again from the earth. School students set up collection boxes, made posters and went door-to-door collecting batteries from residents.<sup>86</sup>

In two weeks, the students of Port Perry collected 647 rechargeable and 28,808 regular batteries. This story aptly illustrates how - when EPR is done right, recycling alternatives are convenient and the energy and enthusiasm of the people is harnessed - amazing results can happen.

### **Xerox**

Xerox Netherlands collects old photocopiers from 16 European countries and reuses or recycles the machines and their parts. To Xerox's credit, only 5% of returned materials go for waste disposal. As a result of this 'green' initiative, the company saved \$76 million in production costs in the year 2000 and also avoided disposal fees. Xerox in Rochester, NY implemented a similar program and saved tens of millions of dollars. The initiative resulted in the remanufacture of 30,000 tons of returned machines.<sup>87</sup>

**Interface Inc (Dalton, GA)** – This maker of commercial carpets is changing its focus from providing a product (i.e., carpeting) to providing a service. Interface now leases rather than selling carpets to customers and takes back old carpet and tiles for refurbishing or recycling. By developing this new business perspective, the company can keep the materials that they produce out of landfill. Interface also pioneered installing carpets in tiles, so only high wear places need to be replaced when worn out, rather than replacing the entire carpet – a concept that not only saves on waste but saves money for their customers.<sup>88</sup>

### **Wal-Mart**

Wal-mart now measures how much packaging its suppliers use and scores them on 9 factors, including CO<sub>2</sub> emissions, product-to-package ratio and use of recycled content. Wal-mart's aim is to reduce packaging by 5% which, along with being a step in the right direction in terms of preventing waste, Wal-mart estimates will save the company and its suppliers about \$11 billion.<sup>89</sup>

### **Individual contributions**

There are many day-to-day contributions that individuals can make to reduce waste and live a greener life. See *Appendix 6 – What we do around the house* – for a list of such activities that we embrace in our home. (It is amazing what you do when you start to really think about it!)

## **EMBRACING OPPORTUNITY**

It is amazing what a slight change in perspective can do for possibility! Viewing waste as a resource rather than a liability opens unlimited possibility for local business development, which in turn both reduces waste and provides jobs.

## **Deconstructing Waste**

Deconstruction crews go into buildings that are going to be demolished or have been deserted (with permission of the owners, of course) and recover valuable building materials that would otherwise be 'thrown out.'

Deconstruction workers recover everything from lumber, windows and stair rails to cabinets, bathroom and light fixtures. The items recovered are then restored and sold in retail-like businesses that offer lower prices to their customers.<sup>90</sup>

Besides decreasing landfill, there are many other benefits to the deconstruction trade. By recovering valuable building materials, deconstruction businesses reduce pressures on virgin resources (for example, by recovering lumber, they save having to cut down more trees). The businesses also train workers for skilled jobs and small business development. And last but not least, deconstruction businesses offer a more affordable option for self-help gurus and small, local renovation companies that have difficulty completing with large, franchised retailers.<sup>91</sup>

Run both as for-profit and not-for-profit businesses, deconstruction ventures have been very successful in communities across North America. There are approximately 350 such ventures in the US and 50 in Canada, employing from 10 to 40 workers and paying their workers \$10 to \$18 per hour.<sup>92</sup>

## **WasteWise in Georgetown, ON**

After fighting off efforts to build a landfill and then an incinerator for Toronto's trash, Georgetown residents decided to prove that there is an alternative to waste disposal. Their answer: WasteWise, a non-profit centre run largely by volunteers.

There are four components to WasteWise's services. They repair bikes and appliances, sell these and other ready-to-use items, collect, process and sell recyclables not covered by local blue box program and provide educational services regarding the reduction of waste and toxics use. A tremendous success, WasteWise became self-sufficient in five short years.<sup>93</sup>

WasteWise has embraced the local community. Young people can participate in the program and develop important and marketable skills. Seniors can share their skills and talents with the community. The centre can act as an incubator for small repair businesses by providing affordable overhead and mentorship. There are many opportunities for community partnership and participation which have been embraced – creating the community buy-in that is vital to ensuring the success of the centre.<sup>94</sup>

A similar non-profit operation has been established in Burlington, Vermont. In 2000, the centre generated a gross income of \$750,000 and employed over 20 full-time staff. In addition to their core service of repairing and reselling small and large appliances, electronic equipment and computers, the centre has recently added building deconstruction and salvage services to its operation.<sup>95</sup>

## **REACT**

The non-profit company, REACT, is headquartered in Humboldt, Saskatchewan and collects waste for over two dozen municipalities, both rural and urban. In less than two years, REACT has expanded from one employee to eleven and has reduced landfill use by 60%.

REACT's program is a model of simplicity. People buy yellow tags for a dollar apiece and tie them onto bags to identify non-recyclable garbage. REACT hauls those bags to the landfill. Recyclables are sorted by homeowners and taken to REACT depots where workers process paper, glass, aluminium and other recyclables. REACT guarantees that recyclable materials do not end up in landfill.

The key to REACT's success lies in transparency. Citizens deal with REACT directly, as they do with any business. If they're not satisfied with the services that they are receiving, they can use their money to make other arrangements.<sup>96</sup>

## **Nova Scotia Innovation**

Nova Scotia is moving towards its vision of a truly sustainable economy, leading North America in its innovation. Since launching their new Solid Waste-Resource Management Strategy in 1996, millions of kilograms of materials which otherwise would have been discarded in landfills or open burning dumps have been converted into new products and new jobs.

### ***Guiding Principles***

The Nova Scotia initiative is based on the five key components of waste diversion - *source reduction (prevention), material reuse, recycling, composting and business development*<sup>97</sup> - while incorporating the fundamental principles of polluter pays, product stewardship, shared responsibility and a commitment to the "development and commercialization of innovative environmental products, services and technologies."<sup>98</sup>

## ***Provincial Priorities***

Among the initiatives instituted by Nova Scotia, the province (which had considered incineration as their 'waste solution' but listened to its citizens and decided against it):<sup>99</sup>

- Consulted extensively with municipal governments and the people of Nova Scotia *and* used their input in the development of the new waste strategy.<sup>100</sup>
- Cooperated on a regional scale to minimize costs.<sup>101</sup>
- Placed bans on the disposal of household hazardous, recyclable and compostable materials.<sup>102</sup>
- Expanded their deposit / refund system to include all containers except those for milk, which are recycled.<sup>103</sup>
- Set up a resource recovery fund to manage the dollars collected through the deposit / refund system. The fund is managed by a private sector, industry-driven, non-profit organization.<sup>104</sup>
- Targeted solid waste resources to create new employment and business opportunities through the production of value-added goods.<sup>105</sup>
- Embraced innovative environmental technologies that they could market to other jurisdictions facing the same waste management challenges.<sup>106</sup>
- Incorporated a communication strategy to provide Nova Scotians with the information and encouragement necessary to reduce, reuse, recycle and compost effectively.<sup>107</sup>

Vital to Nova Scotia's success has been the development of the Environmental Technologies Entrepreneurship Program. The program is supported by a private sector management consortium and acts as a link to the business sector. The program provides industry, government and academia with technical and marketing information, technology assessments, marketing assistance, business mentorship and commercialization, investment assistance and the promotion and demonstrations of new technologies through pilot projects.  
What an excellent resource! (56)

## **Amazing Accomplishments**

Among other great successes, Nova Scotia has<sup>1</sup>:

- Provided municipalities with over \$44.2 million for the implementation of the new waste strategy.<sup>108</sup>
- Established a network of 84 Enviro-Depots and five Regional Processing Centres.<sup>109</sup>
- Instituted centralized composting for the business sector (supermarkets, restaurants, food processing plants, etc.) in 53 of 55 municipalities.<sup>110</sup>
- Established the Used Tire Management program, which has diverted 5.6 million tires from landfill since 1996.<sup>111</sup>
- Established the Paint Recycling program, recycling 259,000 litres of paint in 2004 alone and producing over 400,000 litres new paint since 2002. (The Paint Recycling Company is one of only 6 in all of North America that specializes in recycling old paint.)<sup>112</sup>
- Composted more than 233,000 tonnes of organic waste since 1996.<sup>113</sup>
- Recycled hundreds of thousands of tonnes of paper, plastic, glass, steel / tin and aluminium since 1996.<sup>114</sup>
- Reduced by half the amount of waste going to municipal landfills.<sup>115</sup>
- Reduced active landfills by 75%<sup>116</sup> and stopped all open burning. Remaining landfills now meet new landfill guidelines.<sup>117</sup>
- Created over 1,300 new jobs in recycling and by turning waste into resources, including 600 new jobs turning recyclables into new products, 500 new jobs in the transporting of waste, recyclable and organics, 150 new jobs at recycling facilities, 50 new jobs in the new tire processing program and 44 new jobs through the processing of PET plastics at Novapet.<sup>118</sup>

In 2001 alone, Nova Scotia raised \$9 million through their deposit / refund system for bottles and have achieved a return rate of 80%. 241 million beverage containers have been redeemed since 1996 with average deposit refund being half of what customers pay, with the balance going to the resource recovery fund. Fifty per cent of the dollars raised through this initiative go back to the municipalities in a lump sum and a quarter support waste education and the purchase of equipment to reduce waste. The remaining dollars support the development of private waste diversion businesses. (269, 38, 56)

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<sup>1</sup> These accomplishments are as of the year 2004. The numbers and successes are likely much higher now, almost 4 years later.

- In 2004 alone, committed \$1.4 million to promote recycling and composting through public education initiatives, including a recycling and composting hotline for the entire province.<sup>119</sup>
- Been recognized as a *World Leader in Recycling and Composting* by GPI Atlantic. GPI based this recognition on a full cost-benefit study of Nova Scotia's solid waste management system in 2004.<sup>120</sup>
- Recently initiated a new program to recycle electronic products, such as televisions and computers.<sup>121</sup>

### ***Global Value***

Nova Scotia's expertise, experience and enthusiasm have attracted interest from across the world. They have:

- Marketed their composting technologies as far away as Trinidad and Tobago.<sup>122</sup>
- Shared information with representatives from Iceland, the Bahamas, China, Ireland and Mexico.<sup>123</sup>
- Developed proposals to train waste management staff in Moscow.<sup>124</sup>
- Hosted environmental studies students from *France and Britain* [italics mine].<sup>125</sup>

## **THE INCINERATOR WILL NOT COMPETE WITH THE 3 R'S (REDUCE, RECYCLE, RE-USE)**

“The incineration industry and Government argue that incineration and recycling can exist side by side. Some incinerators have facilities for removing glass and metals. But if paper and plastic waste were minimised and recycled as much as possible, in most areas there would not be enough left to make incineration financially worthwhile.”

“In mid-1995, Cleveland County Council [in Scotland] signed a contract with a waste company to supply at least 180,000 tonnes of waste for incineration and 80,000 tonnes of landfill each year. There was a ‘shortfall’ of 12,000 tonnes in the first year of the contract, and the authorities incurred penalties of £147,000. The Associate Director of Environmental Services ... has said ‘essentially we are into waste maximization,’ and that they are constrained by the contracts from doing even a modest amount of recycling.”

*Friends of the Earth Scotland (31)*

### **WHAT IS REALLY HAPPENING?**

The real life experiences of communities with incinerators do not bear out the claim that such methods of disposal do not hamper efforts to reduce, reuse and recycle. In fact, the exact opposite is the case. Because incinerators must run 24/7, they require an ongoing supply of garbage in order to operate, a scenario which does nothing to support separation and recycling.<sup>126</sup>

The motivation to reduce, reuse and recycle is further hampered by arrangements that require municipalities to pay incinerator operators penalties if the municipalities do not provide a guaranteed amount of waste. (To read more about these arrangements and their disastrous financial results, see section *This Project is Financially Responsible*). Incinerators not only hamper attempts to divert waste, they actually encourage the production of waste in order to keep the machines running.<sup>127</sup>

Some jurisdictions, like Sweden, have had to actually *import* their waste to keep incinerators going.<sup>128</sup> Given this circumstance in Europe, the Durham Region assertion that we will never take Toronto garbage is unrealistic if not downright ridiculous. Either our recycling programs will suffer (because we’ll need garbage to burn) or we will be desperate for someone else’s garbage (because we’ll need garbage to burn) – and we can all be pretty sure that Toronto will be first in line to send its garbage to our incinerator.



Yet another way that incineration hampers the 3 R's is by monopolizing municipal waste management budgets. Incinerators consume so much of local solid waste budgets that little money is left over for comprehensive recycling and compost programs.<sup>129</sup>

### **Exception to the rule?**

In an example that I am sure supporters of incineration will embrace, Peel Region's recycling programs apparently have not been affected by the operation of incineration facilities. However, they do admit to having, "one of the more aggressive diversion programs in Ontario" and to hosting an incinerator that is a "right sized" to promote recycling (right sized in this case is 140,000 tonnes per year).<sup>130</sup> Currently, Durham Region's proposal would fit neither of these criteria - we do not have an aggressive recycling program (see the section *We have to do this now, We have no choice, Michigan is closing and this is a crisis!* for evidence to support this assertion) and we are looking at an incinerator that can accommodate up to 400,000 tonnes. Consultants have also admitted that we could go beyond 400,000 tonnes if the Environmental Assessment<sup>2</sup> process were re-initiated<sup>131</sup> - so there are no guarantees that an incinerator in Durham Region wouldn't grow even larger.

I'll let Brenda Platt of the Institute for Local Self-Reliance sum up this section because she does such a good job of it: "Incinerators need discards to operate and make good on debt payments. Reliance on incineration perpetuates the throw-away lifestyle, production of toxic and wasteful products, and local government responsibility for waste and its costs. Incinerators take away the incentive and pressure for corporations to redesign their products and packages, to reduce toxins and to conserve resources."<sup>132</sup>

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<sup>2</sup> It has come to my attention speaking with other activists that it may not be the Environmental Assessment but rather the Terms of Reference that would have to be re-done and submitted to the Ministry of the Environment. If this is the case, the requirements for public consultation, if any, would be different than they are for an Environmental Assessment. I am investigating this issue now and will update DEBUNKING accordingly when I have clarified the process.

## **WE NEED TO LOOK AFTER OUR OWN WASTE / KEEP IT IN OUR OWN BACKYARD / NO MORE NIMBY (Not in My Back Yard)**

“Rather than welcoming the state-of-the-art (facility)...they (staff) show nothing but contempt,’ she said. ‘It’s a matter of [Clarington] staff’s ‘NIMBYism,’ she said. ‘Forget about our children and our grandchildren,’ she said, ‘Let’s worry about ourselves now ... I look forward to the day when all our dumps will be mined and turned to ash.’

*Catherine McKeever, quoted May 30, 2007 in This Week (115)*

“I have recently read those who are against incineration referred to as NIMBY’s. I have been to several council meetings and none of the delegates have stated we do not want to take care of our garbage. They have all stated that incineration is wrong, period, no matter where the incinerator is located.”

*Kathi Bracken in a Letter to the Editor, This Week, June 13, 2007 (197)*

“NIMBY is the industry’s name for democracy in action.”  
*Dr. Paul Connett, quoted in (34)*

I can’t do much better than the three speakers above do at illustrating the real issue behind opponents to incineration being accused of ‘NIMBYism’. Isn’t it much easier to accuse the opposition of NIMBY than it is to address the real concerns that they bring to the table?

The NIMBY label is used to totally dismiss the views of others without any validation that the label is even accurate. In other words, accusations of NIMBY are used to shut down debate and discourse, as have been most of the sound bites of inaccurate or incomplete information that have come from those wanting an incinerator in Durham Region (see the following section *We have to trust the process* for information that validates this statement).

Beyond the fact that most opponents to incineration are opposed to it anywhere – not just in Clarington – there are other inconsistencies in the NIMBY argument. By accusing opponents of NIMBY, we have to assume that the regional politicians and staff members who want to build an incinerator could NOT of be accused of the “not in my backyard” syndrome themselves. But this is not the case, on at least two counts.

## **WHAT ABOUT THE ASH?**

Firstly, the burning of garbage creates by-products. In addition to fly ash (about 5% of the ash and considered extremely toxic) and bottom ash (defined as 'toxic residue' in the European Union<sup>133</sup> and containing significant concentrations of heavy metals and other chemical pollutants),<sup>134</sup> the carbons used to clean filters are also considered toxic waste and need to be disposed of with extreme care.<sup>135</sup>

Now, given that many Durham Region politicians and staff members who support incineration have attested to the evils of landfill and have sworn to build no more dumps,<sup>136</sup> where do you suppose the toxic ash and filters will go? We have no landfills in Durham Region that can take hazardous wastes so the ash would have to go somewhere else. Indeed, when pressed for an answer to the 'where will the toxic ash' go question, the response from the Region has been Peterborough or Northumberland.<sup>3 137</sup>

Just how is this keeping our garbage problem in our own backyard?

## **WHAT ABOUT THE EMISSIONS?**

According to the European Union, persistent organic pollutants – like the dioxins and furans created by incineration – “transport across international boundaries and pose a threat to the environment and to human health all over the world.”<sup>138</sup> Incineration is a unique method of waste disposal in that instead of just polluting its nearby community, incineration shares pollution with *all* of its neighbours. (Please see the section *Incineration is Safe* for more information of the dangers of incinerator emissions). Toxic ash is another threat, because it is easily wind-borne.<sup>139</sup>

Consider statistics from Sweden: In 2004, Sweden's 29 incinerators produced emissions made up of 1,707 tons of nitrogen oxide, 337 tons of sulphur, 24 tons of particulates, 101 tons of hydrogen chloride, 37 kg of mercury, 54 kg of lead, 5 kg of cadmium and .7 grams per year of dioxins.<sup>140</sup>

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<sup>3</sup> Please note, at the writing of this report, Northumberland has neither committed to send trash to an incinerator in Durham Region nor agreed to take our toxic ash or bottom ash. I spoke to waste management officials in Peterborough myself in late October, and they have already informed Durham Region staff that they will neither send trash to us for incineration nor take our toxic fly ash.

Now, if we do the math and divide these numbers by 29 (the number of incinerators in Sweden) we get a rough idea of how much pollution comes from one in incinerator: 58 tons of nitrogen oxide, 11.5 tons of sulphur, .82 tons of particulates, 3.5 tons of hydrogen chloride, 1.3 kg of mercury, 1.8 kg of lead, .17 kg of cadmium, and .024 grams of dioxins.

(Just one quick comment on the seemingly low rate of dioxin emissions: It is important to keep in mind that dioxins are toxic at a ratio of 1 to 1 trillion – that's 1 to 1,000,000,000,000.<sup>141</sup> So whereas .024 *grams* may seem small, we're really looking at a measurement of 240,000,000,000 *picograms* – which is the unit used to measure dioxin. This new number will give you a slightly different picture of the situation than .024 grams.)

Some proponents of incinerators may say that these numbers can't be used in looking at our facility-to-be in Durham Region because we don't know its size or technology. That is true. But for arguments sake – and since so many Durham Region staff and politicians hold Sweden up as the example to emulate – these figures can provide us a ballpark so that we can imagine the impacts of the emissions we are facing. And all of these tons and kilograms of pollutants we will be sharing with our neighbours, near and far.

Just how is this keeping our garbage problem in our own backyard?

Here's some food for thought from the United Nations as we wrap up and move on to the next section of this report.

"...they [Persistent Organic Pollutants (POPs) like dioxins and furans] evaporate and travel long distances *through the air and water*...in a process known as 'grasshopper effect', these chemicals jump around the globe, evaporating in warm places, riding the wind and particles of dust, settling to Earth in cooler spots, and than vaporizing and moving on again...[there is a] general drift of these pollutants toward the Poles and mountain areas [cooler areas]...Indigenous people in the Arctic ... thus have some of the highest recorded levels of POPs. Yet they are *hundreds or thousands of kilometres* from where these pesticides and industrial chemicals are released, and they certainly received little benefit from the chemicals' original use."  
[Emphasis mine]

**Source:** United Nations Environment Program (UNEP) and UNEP's Information Unit for Conventions (2005). *Ridding the World of POPs: A Guide to the Stockholm Convention on Persistent Organic Pollutants*.

## **WE HAVE TO TRUST THE PROCESS**

[Regional Council is] not willing to consider information and objections brought forward by residents who have done their homework and presented documented reports, studies and concerns; 16 Clarington doctors who have signed a petition declaring their health concerns as well as opposition to the incinerator; 43 Durham Region doctors who have done the same; Peer reviewers hired by Clarington who outlined shortcomings and problems with EA to date.

*Clarington Watch Dog (215)*

“This letter refers to numerous meetings, yet we just learned of the project in April. Some of the meetings, we have learned, had only three people attending, another had 11, hardly considered ‘open and transparent extensive public consultation.’ All of these notices clearly missed people. Two of our 2007 notices arrived two days after the scheduled meeting dates, yet we are, arguably, the most affected by the project, as we back right onto the site. We concede there have been presentations, a one-way direction of information from them to us, but absolutely no answers have been provided to our questions, even though we have put them in writing to the proponents with copies to you.”

*Mike and Renee Wright, Communities First  
Letters to the Editor, York Region News, July 14, 2007 (191)*

### **Update 2008**

For many more extensive and up-to-date reasons why we can't trust the process please also see *Appendices 7 and 8 – Complaint to the Environmental Commissioner of Ontario, Appendix 9 – Letter to Clarington Council and Appendix 10 – Responding to the Region.*

I will let these situations speak for themselves...

### **EXPERT ADVICE FROM DR. SMITH**

Dr. Lesbia Smith was brought on to research the health impacts that may, or may not, result from living near an incinerator. In carrying out this duty, Dr. Smith did a literature search of epidemiological studies into the health hazards related to incineration.

### **Research 101 – A Primer**

For those who need to look up the word (as I did), epidemiological studies are those that look at real life situations and try to determine cause and effect relationships. For example, a researcher can look at people living near an incinerator and measure levels of toxins, etc. in their bloodstream. The researcher can then compare these results to people not living near an incinerator and try to draw conclusions from the differences – or lack thereof.

A key flaw in epidemiological studies is that, unlike in a scientific experiment, you cannot control real life conditions – making cause and effect conclusions difficult. For example, if the folks I talked about above have comparable levels of toxins in their blood it may be because incineration isn't affecting the people living near the incinerator. Or, the results might hide the fact that the folks living away from the incinerator are being poisoned by something else – perhaps local industry or an incinerator near to, but outside of, their own community. (Consider Europe – with 29 incinerators in Sweden alone, it would be very challenging to find people who don't live near an incinerator. So to whom would you compare them?<sup>142</sup>)

I should note here that Dr. Smith did not review toxicological studies on the impacts of incinerating municipal waste. Toxicological studies measure the toxicity of pollutants by carrying out scientific experiments where conditions are controlled, much like the experiments you learned about in high school (control groups and all).

An example of toxicological research is the work that has been done by the Endometriosis Association with rhesus monkeys. Seventy-nine per cent of the monkeys exposed to dioxins – including those from municipal waste – developed endometriosis.<sup>143</sup> Unlike in epidemiological studies, it is much easier to establish cause-and-effect relationships in toxicology because the situation is controlled. The down side is that the situation is also contrived, whereas epidemiological research is more 'in the real world.' Neither method of study is foolproof.

### **Dr. Smith's Flip Flop # 1**

In September 2007, Dr. Smith reported the conclusions of her research to the Regional Council of Durham. I know this because I attended that day and listened to what Dr. Smith had to say. The gist of her report was that epidemiological research regarding the health effects of incineration is inconclusive. Apparently there are studies that say incineration is harmful and there are studies that say it is not. She concluded in her talk to regional councillors that **the epidemiological research could not be used to support or oppose incineration.**

On October 9<sup>th</sup>, 2007 Dr. Smith was on hand at public information session regarding the preferred site for the incinerator. I also attended this session and was surprised that Dr. Smith seemed to be presenting different conclusions than she did at Regional Council. Although Dr. Smith didn't directly say that her research gave the green light to incineration, that message was very much implied in her comments.

I took the opportunity to ask Dr. Smith a clarifying question. Specifically, I asked why she told Regional Council one thing and seemed to be giving a different message to this audience. Dr. Smith explained that she had done some extra research and found three more recent studies concluding no ill harm to residents living near incinerators. She qualified, however, that the studies were very short-term and so they didn't necessarily offer useful information (because the effects of emissions are cumulative and can take years to show themselves).

I was truly baffled by Dr. Smith's flip flop and asked her again to please clarify, did she or did she not tell Regional Council that the studies were inconclusive and could not be used to support or oppose incineration? And here she was doing just that, using her research to support incineration. Dr. Smith clarified again that she had done additional research but that the three studies she looked at had limitations because they were short-term in nature.

So here are my questions...

- 1) Why did Dr. Smith even mention the three additional studies if the results are so limited?
- 2) Why weren't those three additional studies included in the Dr. Smith's original literature search?
- 3) Why is it that, when research results don't endorse the incinerator, consultants can go back and look some more until they find something in support of their technology? This phenomenon also surfaced in the Generic Human Health and Ecological Risk Assessment Study prepared for the Durham-York Residual Waste Study (see section *Assessing the Health Assessment*, point 11). I find this inconsistency especially frustrating when residents are told that they must only present 'facts' (this statement was a part of the introduction on October 9<sup>th</sup>) while consultants seem to be able to manipulate information as much as they'd like.

### **Dr. Smith's Flip Flop # 2**

In her first report prepared for Durham & York Regions, Dr. Smith reported on the bottom of page 4 that, "It should be noted that these particles are emissions of concern primarily from hazardous waste incineration so that it would be prudent to ensure that residual waste are free of these components which are associated with toxic nanoparticles formation (e.g. plastics) before the waste is destroyed in an EFW facility."<sup>144</sup>



In plain English, Dr. Smith is saying that we shouldn't burn plastics in an incinerator because toxic nanoparticles would be emitted. Nanoparticles are infinitesimally small particles that largely escape the pollution controls of an incinerator and are a health threat to people because they are breathed into the lungs and thus enter the bloodstream.

In her second report, the above paragraph was gone. In its place was this one:

"Dioxins are produced de novo from incineration regardless of what is burned. Plastics are destroyed completely by combustion and any recombination with polychlorinated aromatic compounds that occur in the burning process is dealt with in the emissions control technology. The inference that plastics per se are a source of nanoparticles is incorrect. Limiting plastics in general is not a prerequisite of the incineration technology."<sup>145</sup>

Again, in plain English, Dr. Smith is now saying that burning plastics is no different than burning anything else in an incinerator, that plastics are completely destroyed in the fire (the plastics may be destroyed, but the nanoparticles aren't – they are created) and that the pollution controls of the incinerator would stop any dangerous particles from escaping. Not only are these comments contrary to what she said in her first report, they are also wrong (see the sections *Incineration is Safe*, *Research Referenced by Opponents to the Incinerator is out of date with the Technology that we would use* and *We are Protected by the Ministry of the Environment / The Government* for the information and references to back up this statement).

When questioned further on the safety of burning plastics at the October 3rd Public Information session - and whether she was saying that nanoparticles did *not* present a health risk - Dr. Smith said that she could not answer the question because it was outside the realm of her expertise.<sup>146</sup> Why is she even commenting on this topic at all, then?

Dr. Smith was questioned again about her flip flop at the October 9<sup>th</sup> Public Information session. Dr. Smith explained that the second report didn't so much replace the first and thus, the information from the first didn't need to be repeated in the second. This argument might be believable if the comments from the second report didn't completely contradict the comments from the first and if both the first and second reports appeared on the Regional website, rather than just the second one.

Besides the ethical questions around this flip flop, this issue of burning plastics is of particular concern because plastics would be the primary source of fuel for an incinerator. Mirka Januszkiewicz, Durham's Director of Waste Management has identified, "A lot of plastics," as what is left over in Durham Region after recyclables are diverted.<sup>147</sup>

When I spoke at Regional Council in September, one councillor informed me that a Health and Social Services Committee and the Medical Officer of Health were working to make sure that a safe decision [regarding the incinerator] was made for Durham Region. She then asked whether I trusted that they would take care of the best interests of the citizens of Durham Region. I told her that I wasn't sure. Now, I would simply answer, "No." After all, the Medical Officer of Health will be relying on Dr. Smith's opinion when he decides what is best for us.

## **A FEW OTHER EXAMPLES OF WHY WE SHOULDN'T TRUST THE PROCESS**

### **Choose your technology first**

Both Dr. Tony Van der Vooren of AMEC and Steven Rowe - who did a peer review of the site-selection process - recommended that a site for the incinerator not be chosen until the Region had decided upon the technology they would be using.<sup>148</sup> Durham Region went ahead and did just that, choosing the short list of sites and then finalizing site selection before a technology had been chosen.

### **The health assessment is tainted**

"The consultants report [The Generic Human Health and Ecological Risk Assessment, see section *Assessing the Health Assessment*], which tackles the issue of health risks, was done by the firm Jacques Whitford, a member of the pro Energy from Waste Coalition [pro-incineration] lobby group. Perhaps the report's findings are indisputable but even the perception of having a proincineration consultant do the report is irresponsible. An independent peer review was conducted but it only reviewed the Whitford report."<sup>149</sup> And considering the above point, did the Region even consider the peer review report?

### **The site selection process is tainted**

“One consultant’s report noted that the ‘then draft terms of reference unfairly prejudiced the site in search of lands owned by the two regional governments, in particular the significant areas of land owned by the Region of Durham near the Courtice waterfront.”<sup>150</sup> Many citizens voiced this very concern at the Public Information sessions in October, but those involved in the process of choosing the site deny that any prejudice existed in choosing the sites.

### **We aren’t being told the whole story**

Proponents of the incinerator keep insisting that there is a 400,000 tonne maximum (per year) for burning materials in the incinerator, and that we could not go over that limit.

Yet at the October 9<sup>th</sup> Public Information meeting a woman asked about minutes from a Regional Council meeting in which Council stated that they would require the vendor [awarded the EFW contract] could guarantee the capacity to expand.

The consultants originally denied that the tonnage would go over 400,000. When the woman stepped up to the mike and asked the question again, the consultants finally admitted that the facility could be expanded if the Region went through the Environmental Assessment<sup>4</sup> process again.<sup>151</sup>

Durham Works Commissioner Cliff Curtis is also on record as saying: “There’s nothing to prevent York from increasing the amount it wishes to send to the Durham [incinerator] plant in the years to come.”<sup>152</sup>

### **Whether we come out, or stay home, we just can’t win!**

“Mary Novak, a Clarington Councillor, says public meetings attract those opposing incineration, while the silent majority might be staying at home. ‘That’s fair enough, that’s what we’re having this consultation process for, but I’m not sure they represent everybody.’”<sup>153</sup>

### **Would it be too much to ask to be treated with a little respect?**

“There will always be people who object to the process because they’re not getting the answers they want,” Durham Works Commissioner Cliff Curtis responded.<sup>154</sup>

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<sup>4</sup> It has come to my attention speaking with other activists that it may not be the Environmental Assessment but rather the Terms of Reference that would have to be re-done and submitted to the Ministry of the Environment. If this is the case, the requirements for public consultation, if any, would be different than they are for an Environmental Assessment. I am investigating this issue now and will update DEBUNKING accordingly when I have clarified the process.

“Waiting for the report is a lot like the anticipation that builds for some before Christmas,’ he said. "My take on all of this is that people just by nature ... can't wait till December 25," he said. "They have to attempt to find out what's in the Christmas boxes." But, "...you have to deal with the presentation (expected from Clarington staff Sept. 4 [2007]) and the actual report to know what you're actually talking about," he said.<sup>155</sup>

### **Supporters of incineration don't understand it**

The following comments by regional politicians and staff members who seem to want to bring incineration to Durham Region aptly illustrate that they do not understand the real issues at hand.

**He said:** "In Copenhagen, there was a townhouse complex within 200 metres of the EFW facility. They met with a man who had lived there for 30 years and another who had just moved in. 'We asked about depreciation of property values and if there was odour,' Mr. Anderson said. "They didn't have any concerns about it. It is just the accepted way of dealing with waste here."<sup>156</sup>

**My reply:** It is interesting that our Regional Chairman is satisfied that incineration is safe because he's talked to two people living near an incinerator. Yet when hundreds of Durham Region citizens express their concerns about the health and environmental effects of incineration – including almost 60 physicians – those concerns are dismissed by the Region. This statement also contains two fundamental errors in logic. 1) Just because people feel safe doesn't mean they are safe. 2) Just because incineration is accepted as a 'way of life' doesn't mean incineration is right. Lastly, it is worth keeping in mind that the most dangerous of pollutants that come out of the incinerator stack have no smell.

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**He said:** 'Mr. Anderson said people had clothes out on the line next door to the incinerator, a reflection of the low level of concern over the facility."<sup>157</sup>

**My reply:** It is a logical fallacy to leap from laundry on the line to feeling safe. In addition, we see here again the logical error of equating people *feeling* safe with people *being* safe.

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**He said:** "A trip to a Florida incinerator left Clarington's mayor with the impression of a place where 'odours were at a minimum and seagulls, few and far between... The Tampa area facility was "very clean. Odours were at a minimum and seagulls, few and far between," he reported. ""<sup>158</sup>

**My reply:** The Mayor of Clarington seems to be making the same leaps in logic that our Regional Chair has made. Odours, seagulls and clean facilities are no indication of the safety of a facility and certainly have no bearing on what is coming out of the smokestack. Quite frankly, if I had my choice between seagulls and incinerators, I'd take the seagulls.

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**He said:** "They were clean, they were well run, the emissions were controlled,' said Cliff Curtis, Durham Region's commissioner of works. "They were actually an asset to the community' ... 'The real story with energy from waste is what process they use to scrub the flue gases,' Mr. Curtis said. 'Some were better than others. I would say both Malmo and Alkmaar were extremely clean, extremely well-run, good looking, efficient operations.'" <sup>159</sup>

**My reply:** I would imagine that Mr. Curtis is not qualified to comment on how well emissions are controlled or how well the scrubbing process works. Perhaps he received an education from workers at the plant but keep in mind, they have a vested interest in making incineration sound good. And again, it doesn't matter whether a plant is an extremely clean, extremely well-run, good looking, efficient operation – the question is what is coming out of the smokestack.

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**He said:** "Councillor Howie Herrema said he examined a number of incinerator sites, some in rural areas, but some very close to living centres. 'One site we were at had a daycare across the road,' he said. 'In Europe there seems to be no health concerns with authorities we went with.' He added if residents were against the facilities, he didn't see any signs of protest from them. 'From a health standpoint, it got rid of a lot of concerns,' he said. He added some of the smokestacks on the incinerators were 300 feet high, but 'you couldn't see emissions.'" <sup>160</sup>

**My reply:** Having a daycare across the street from an incinerator means nothing except that there is a daycare across from the incinerator – it does not mean that an incinerator is safe for children. Here is an interesting counterpoint: In Maryland, the state enacted a bylaw prohibiting the construction of an incinerator within a mile of a school (see *Appendix 1*).

Mr. Herrema is making a similar mistake to Mr. Anderson and Mr. Abernathy in that he seems to equate the safety of emissions to being able to sense them – in this case, being able to see them. They cannot be seen

because they are so small.<sup>161</sup> It is disconcerting that, based on these observations, the Counsellor seems to have decided that incinerators are safe (for references and information that validate that incinerators are not safe, please see the section *Incinerators are Safe*).

Hmm, if a lack of people speaking out against incineration means incineration is safe, then wouldn't the opposite also be true ... because we sure have a lot people speaking out against incineration in Durham Region. Please see section *There are incinerators in Europe and the US and everything is fine there* for information that roundly disputes the claim that incinerators are okay with Europeans.

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**He said:** "Mr. Anderson said they learned that 30 Swedish plants combined had emissions of less than one gram in 2005 and the biggest concern among residents was truck traffic to and from the plants."<sup>162</sup>

**My reply:** Just because people are more concerned about truck traffic than they are incinerators doesn't mean that incinerators are safe.

The '1 gram' comment is one that has been repeated a lot by proponents of the incinerator. First of all, it is not true that the plants had, "less than 1 gram of emissions." They had less than one gram of *dioxin* emissions.<sup>163</sup>

Secondly, it is important to keep in mind that dioxins are toxic at a ratio of 1 to 1 trillion – that's 1 to 1,000,000,000,000.<sup>164</sup> So whereas 1 *gram* may seem small, we're really looking at a measurement of 1,000,000,000,000 *picograms* – which are the units used to measure dioxin. This new number gives a slightly different picture of the situation than to say 1 gram.

Consider this information: "By disrupting hormone receptor sites, dioxin can literally change the functioning and reproduction of our cells. There is no safe dose; our own bodies have no defence against it – it acts at a molecular level, exhibiting toxic effects at concentrations of one part per trillion – a drop in 300 Olympic-sized swimming pools."<sup>165</sup>

I should also point out that there is no mention about what else is in the emissions: In 2004, Sweden's 29 incinerators produced emissions comprised of 1,707 *tons* of nitrogen oxide, 337 *tons* of sulphur, 24 *tons* of particulates, 101 *tons* of hydrogen chloride, 37 *kg* of mercury, 5 *kg* of cadmium and 54 *kg* of lead.<sup>166</sup>

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**He said:** “These (European) representatives, as well as all other facility and provincial government representatives have all concluded health impacts are not a concern in facilities and countries utilizing modern pollution prevention and control systems,’ said Mayor Abernethy.”<sup>167</sup>

**My reply:** “Because of the large number of hazardous substances that have been, and still are, handled, waste management continues to constitute a major environmental risk. We still know little about some of the long-term risks and effects of diffuse emissions of hazardous substances from waste handling.”<sup>168</sup>

“The greatest benefit derived from better management of waste resources is in reducing greenhouse gases. The greatest risk posed by waste management is the risk of dispersal of hazardous substances found in the waste or formed during its treatment.”<sup>169</sup>

“There is one proviso attached to the view of low environmental impact. The precautionary principle dictates that particular attention be paid to assessing the long-term risks of emissions of organic pollutants. *There are gaps in our knowledge of the content and impact of these pollutants.* Available data should be improved by research and collation of existing information [emphasis mine].”<sup>170</sup>

All three quotes above successfully argue the Mayor’s point about all of those European folks believing that incinerators are safe. And all three statements come from Sweden’s own waste management strategy.<sup>171</sup>

## WE HAVEN'T MADE A DECISION YET

When I spoke to Regional Council in September, Mr. Anderson asked whether I thought people were upset about the incinerator because they believed a decision [to build the incinerator] had already been made. I answered, "Yes." The Chairman went on to explain that a decision had not yet been made and that the Regional Council would not decide whether to build an incinerator until December, after the Environmental Assessment was completed.

When I returned and spoke to Regional Council on October 31, I mentioned that I found it hard to believe Mr. Anderson's earlier statements. Following are just a few of the reasons why this is the case. I will let these folks speak for themselves.

- "Providing there are no delays, Mr. Anderson said he is optimistic Durham and York's incinerator will be up and running by 2010."<sup>172</sup>
- "'There is nothing to the suggestion made by Clarington Councillor Adrian Foster that the Municipality is Durham's ultimate waste solution,' said the [Regional] chairman [Anderson]. 'We deem waste from energy as the ultimate waste solution,' he said."<sup>173</sup>
- "The mayor wrapped up his comments by showing a nine-minute, incinerator industry-produced video by a Swedish group on Energy-from-Waste, widely considered to be the hottest issue facing Clarington at the moment. Mayor Abernathy received the video while visiting Europe as part of a Regional delegation. 'Sweden, as you know, is regarded as one of the cleanest countries in the world,' said Mayor Abernathy, 'I must say, I was impressed.'<sup>174</sup>

See section *Sweden is regarded as one of the cleanest countries in the world ... and they have incinerators* of this report for information and research that tackles the 'Sweden has clean air' argument.



## **YOU DON'T UNDERSTAND THE WHOLE ISSUE SO DON'T JUMP THE GUN**

In The Canadian Statesman news article, *Doctors Raise Concerns about Incinerator* (November 21, 2007),<sup>175</sup> Clarington Mayor Jim Abernathy responds to local doctors' concerns with these comments:

"Before they jump the gun, they should make sure they understand the whole issue," he [Abernathy] said. The author of the article, Jennifer Stone, also noted Abernathy's suggestion that the doctors do more research before drawing conclusions."<sup>176</sup>

It was one thing when our local politicians – who have made it an occupation of jumping the gun (see the section *We Haven't Made a Decision Yet*) - were throwing this line at the everyday citizens who have been protesting the incinerator, even though those citizens had done all kinds of their own research. But now our Mayor is saying that doctors don't know what they are talking about.

Can you follow this logic?

- 1) ***Councillors and bureaucrats go to Europe and come back espousing the wonder and amazement of incinerators.*** Whenever they are challenged (by anyone saying incineration isn't wonderful), they bring up quotes of 1 gram of emissions<sup>177</sup> and daycares next to incinerators<sup>178</sup> and neighbours feeling safe next door<sup>179</sup> and other such arguments. (These are all debunked in the *We Have to Trust the Process* section.) Some of these Councillors seem pretty convinced that incineration is the way to go.<sup>180</sup>

When doctors go to Europe and what they see is very different – stories of inefficiencies, incinerators being closed down, millions [of dollars] lost<sup>181</sup> - Mayor Abernathy's comment is, well, see the heading of this section.

- 2) ***When the pro-incinerator folks want to defend their information, they refer to their experts*** – as did Dr. Kyle in the same newspaper article referred to above. Apparently the first risk assessment (the one I reviewed in *Assessing the Risk Assessment*) was reviewed by an expert to ensure that it "covered all the bases."<sup>182</sup>

When medical experts – physicians that is – express very real health concerns about the incinerator, they are told, well, see the heading of this section. Sixteen Clarington doctors along with 43 Durham Region doctors have signed a petition declaring their health concerns.<sup>183</sup> When a resident asked what consultants thought about this fact at a recent Public Information session regarding the site selection (held October 9<sup>th</sup>), the

answer he received was, "They're entitled to their opinion."<sup>184</sup> So apparently pro-incineration experts have all the answers and those experts opposing incineration have opinions.

- 3) ***When pro-incinerator folks hear anything about incineration they don't like, they say we are jumping the gun, that we have to wait for all the facts, etc. etc.***<sup>185</sup> Some manage to be especially patronizing when they say this – take these comments from Councillor Trim:

"'Waiting for the report is a lot like the anticipation that builds for some before Christmas,' he said. "My take on all of this is that people just by nature ... can't wait till December 25," he said. "They have to attempt to find out what's in the Christmas boxes." But, "...you have to deal with the presentation (expected from Clarington staff Sept. 4 [2007]) and the actual report to know what you're actually talking about," he said.<sup>186</sup>

Meanwhile, when the ordinary folks say that the pro-incinerator pundits are jumping the gun and have already made a decision, said pundits deny that this is the case – even though there is evidence to the contrary. See *We Haven't Made a Decision Yet* for information and references to back up this statement.

And what is totally missed is that it doesn't matter even if we do jump the gun – because we don't need another report and we don't need to hear from another expert. We already know that incineration isn't safe (see the section *Incineration is safe* for information and references to back up this statement). Which I guess brings up a larger and far more serious question:

Why are some people in power at the Region playing Russian roulette with our health and our environment's health?

## **THERE ARE INCINERATORS IN EUROPE AND US [AND EVERYTHING IS FINE THERE]**

“We believe that incineration will never play a major role in truly sustainable waste management.”<sup>1</sup>

*United Kingdom House of Commons Select Committee (34)*

Protests were held across the UK with several anti-incineration groups taking part in the Global Day of Action to call on government and industry to “stop burning waste and start recycling.” Among other locations, protests were held in London, Essex and South London.

*Indy Media (272)*

“In 1999 and 2000, 10 incineration plants across the UK exceeded pollution limits a total of 553 times...whilst being re-commissioned after a fire, Scotland’s largest incinerator in Dundee breached its safety limits 19 times in April, May and June...” Sheffield’s incinerator, given a 25 million Pounds upgrade in 1998, exceeded permitted limits [of emissions] 156 times in one year.

*Anita McNaught, Times of London (54)*

“Incineration is very costly compared to other methods of solid waste management. Detroit pays over \$150 / ton for incineration of trash. Other communities using the incinerator pay much lower fees...outside customers pay \$20.50 / ton...the Task Force recommends that the City of Detroit terminate the use of the incinerator in 2009 at the end of Detroit’s debt obligation...”

*City of Detroit, Future Solid Waste Management Plan (18)*

“In hindsight, the public sector got most of the risks and the private sector most of the rewards in building energy-from-waste facilities. Typically the municipality provided financing; the company guaranteed the thing would work; the municipality guaranteed a certain amount of trash at a set price...Then the market price for disposal plunged. So Broward County (Florida) trash burns for \$55 a ton at its two big incinerators, but waste from everywhere else is welcomed as cheaply as \$42. In Montgomery County, Pa., locals pay \$63.50 while outsiders can dump for \$41...To survive without legal flow control, some municipalities are resorting to economic flow control instead. In essence, they set the disposal fee at their incinerator low enough to attract trash, then make up the rest of the costs by raising taxes...Taxpayers in Columbus, OH have subsidized the city’s incinerator to the tune of \$100 million over the last decade.”

*Wall Street Journal (61)*

By the mid-1990’s, more than 300 incinerator proposals have been defeated in communities across the US and there are fewer incinerators in the US than at any other time in the last 20 years. Local governments have realized that incinerators are too costly and too dangerous to manage local garbage problems.

Monica Wilson, Multinational Monitor (75)

Dr. Paul Connett (12)

Dr. Paul Connett & Bill Sheehan (13)

Global Alliance for Incinerator Alternatives (GAIA) (34)

You'll have to bear with me as you go through this section of my report. It is one of the longest sections which I guess makes sense, since the Europe and US argument is used so much by those supporting incineration.

In most of this section, as in some of the prior ones, I have let the record speak for itself and have quote authorities, rather than interpreting myself what they have to say (the exception being the history section, which is easier to put together by summarizing the information that I found in various documents). I think you'll get more than enough of a picture of the real situation by reading these comments. Where I thought it might be of help, I have added a bit of commentary. Read on, this is *very* interesting information!

### **WHAT DURHAM REGION IS SAYING**

This is one of the most popular arguments used by supporters of the incinerator. Just look at these comments:

“Roger Anderson said he’s convinced the incinerator won’t cause environmental problems. He said the Region has investigated similar facilities in Europe and the US. ‘They are fairly safe and environmentally safe.’”<sup>187</sup>

“Emissions are substantially better than what we thought and the public acceptance is much greater [in Europe],’ Mr. Anderson said.”<sup>188</sup>

“Toronto’s solution for its own immense refuse issue was to buy a landfill near London and to keep the garbage flowing down the 401. But this is not a 21<sup>st</sup> century solution. In Durham-York, the answer lies in energy from waste long practiced in Europe. It’s an idea whose time has come.”<sup>189</sup> (*This Week* editorial)

“These (European) representatives, as well as all other facility and provincial government representatives have all concluded health impacts are not a concern in facilities and countries utilizing modern pollution and prevention control systems,’ said Mayor Abernathy. But using the most state-of-the-art equipment is key he said. ‘So, if it’s a modern plant, they do not have concerns,’ he said, ‘if it’s an outdated plant, yes, they do have concerns.’”<sup>190</sup>

## **WHAT EUROPE IS SAYING**

“If this option [to no longer consider incineration as recovery on the European waste hierarchy] remains in the legislation at the end of the co-decision procedure, those involved in waste processing will no longer be able to opt as easily as they can today for the simple solution of incineration.”<sup>191</sup> (European Parliament)

In this 2007 document (from which the quote above was taken), European parliament for the first time laid down the waste hierarchy as a piece of draft legislation. Aim of the hierarchy is to prevent and reduce waste production. Incinerators are on the firing line and after debate, the majority of Members of European Parliament rejected the idea that incineration should be considered recovery. Rather, they argued, incineration is a form of disposal – putting it on the same level in the hierarchy as landfill. The crucial point of the debate was the need to reduce both landfill *and* incineration because both cause pollution.<sup>192</sup>

“Once they are built we are talking about creating waste streams for the next 25 years to keep the incinerators going.”<sup>193</sup> (Ludwig Kraemer, Head of the European Union Waste Management Directorate)

“I accept that new incinerators must meet strict emission standards, but in real life things have a habit of going wrong...if councils opt for waste incineration, they will put the health of their communities at risk. They should aim for waste reduction, recycling and composting.”<sup>194</sup> (Irene McGugan, Member of Scottish Parliament)

“...it is of considerable concern that incinerators have been introduced without a comprehensive system to study their health effects and further incinerators are being planned without comprehensive monitoring of either emissions or the health of the local population.”<sup>195</sup> (British Society for Ecological Medicine Report)

“There is one proviso attached to the view of low environmental impact. The precautionary principle dictates that particular attention be paid to assessing the long-term risks of emissions of organic pollutants. There are gaps in our knowledge of the content and impact of these pollutants. Available data should be improved by research and collation of existing information.”<sup>196</sup> (Swedish Environmental Protection Agency, Sweden’s Waste Management Plan)

"Landfill is often the most suitable alternative for waste that cannot reasonably be recycled. This may be waste that is produced in small quantities, that does not constitute a useable resource or that contains hazardous substances."<sup>197</sup> (Swedish Environmental Protection Agency, Sweden's Waste Management Plan)

"The Associate Director of Environmental Services ... has said 'essentially we are into waste maximization,' and that they are constrained by the [incineration and landfill] contracts from doing even a modest amount of recycling."<sup>198</sup> (Associate Director of Environmental Services, Cleveland County Council, Scotland)

### **ALL IS (NOT) ROSY IN EUROPE**

One argument that our regional politicians and staff have used to support incineration is that there is a great deal of public acceptance<sup>199</sup> and little protest<sup>200</sup> over incineration in Europe. Besides the fact that these assumptions are being drawn here are questionable (see section *We have to trust the process*), there is evidence that these statements are blatantly false. Again, I will let the record speak for me...

"...in the Netherlands, one study showed that the standard six-hour test for dioxin emissions from a *modern* incinerator actually underestimated dioxin emissions by a factor of 30 to 50 [emphasis mine]."<sup>201</sup>

"Tax law in Denmark, Iceland, Norway and Sweden used to allow companies to deduct bribes paid to foreign public officials if they were documented business expenses and if they were a customary practice in the country of the recipient."<sup>202</sup>

"On the 6<sup>th</sup> October, demonstrations against waste incineration, organized by the French Doctor's association, took place around France...At the heart of these protests was the city of Clermont-Ferrand, site of a proposed incinerator, despite opposition from 507 doctors and tens of thousands of members of the general public."<sup>203</sup>

Protesters occupied the Basingstoke incinerator construction site in the UK while the Zero Waste Alliance UK was formally launched ... the alliance is an umbrella organization of dozens of groups promoting waste elimination through increased recycling, composting and stronger producer responsibility and packaging legislation.<sup>204</sup>

In Germany, a coalition against incinerators was able to get over one million people to go to their town halls in a 12-day period to sign a lengthy petition in support of a referendum to end incineration. They lost the bid for the referendum, but just barely.<sup>205</sup>

Local residents in Nottingham (UK) battled for a year against the expansion of a local incinerator and succeeded in stopping it. They are continuing the struggle to close down the facility and to campaign for better management of waste and recycling facilities in the city.<sup>206</sup>

Austria, through a developmental aid package, was planning to send 26 extremely dirty incinerators for medical waste to hospitals in the Philippines. Emissions testing by the Department of Health and the World Health Organization showed that the incinerators released dioxins, furans and other dangerous chemicals well beyond Philippine government standards – in fact, the incinerators were decommissioned in Austria in 2003 because they failed to comply with the country's clean air act.<sup>207</sup> (Class act, Austria.)

An incinerator was planned for the community of Bexley, Kent, with the first application put in for the plant in 1991. Eventually the company won their bid to build the incinerator but it is "likely that the plant will have taken two full decades to come to fruition [due to public resistance]."<sup>208</sup>

Surrey County Council (UK) was considering the building of three incinerators ... public meetings held to oppose the incinerators brought out thousands of residents and Council received 39,000 letters of objection since the project was announced less than a year ago.<sup>209</sup> Although the contract [to build the incinerators] was signed 1998, Surrey County still does not even have one incinerator [eight years later].<sup>210</sup>

## **ALL IS (NOT) ROSY IN THE USA**

"... 2,000 ton per day trash incinerator built in Norfolk, Virginia in 1988, was found in 1994, to be putting out more dioxin (approximately 2000 grams of toxic equivalents per year) than the combined emissions from all of the traffic, incinerators, industry and all other sources in Sweden, Germany, and the Netherlands added together."<sup>211</sup>

"Sleuthing from a local environmental group in Indianapolis, Indiana documented that the local *modern* incinerator exceeded its permitted pollutants limit *more than 6,000 times*, including bypassing its air pollution control devices 18 times in less than two years [emphasis mine]. The problem is magnified in countries where there are little or no regulatory control abilities."<sup>212</sup>

In Detroit, Michigan, community activists are coming together and organizing to close an incinerator when the city's contract ends in 2009.<sup>213</sup>

Seventeen years after its construction, Detroit's single largest source of debt is the incinerator, for which they still owe \$2 million. By the end of the contract in 2009, taxpayers will have paid \$1 billion to build and operate the facility. They are paying \$156 per ton to burn their own garbage, which is necessary to cover off the debts and operating expenses. This is more than five times what those from outside of Detroit are paying to ship their garbage in and have it burned. The city could have saved over \$55 million in 2003 if they had used landfill.<sup>214</sup>

Numerous US incineration projects have run into trouble because project developers overestimated projected electricity revenues or local utility companies balked at buying power from the incinerator. When revenues are lower than projected, incinerator operators pass the costs onto garbage customers through higher 'tip' fees or to electricity customers through charging artificially high prices.<sup>215</sup>

"In the US, business interests and a perceived landfill crisis drove an incinerator building boom in the 1980s. But the boom spawned a massive grassroots movement that defeated more than 300 municipal waste incinerator proposals. The activists fought for higher emission standards and removal of subsidies, which virtually shut down the industry by the end of the 1990s."<sup>216</sup>

"A round of surprise government inspections has revealed nearly 400 health, safety or environmental violations at 29 US hazardous waste incinerator sites, according to the US Occupational Safety and Health Administration (OSHA)...Problems included failure to provide adequate training and information for employees, and non-compliance with emergency response and contingency plan requirements"<sup>217</sup>



## COMPARING APPLES TO ORANGES

It would be difficult, if not impossible, to directly 'transplant' the European experience to Ontario. Why? Because Europe has a long history of incineration and subsequently set up laws and regulations to ensure that incineration is used only as a last resort (along with landfill) for getting rid of our garbage.

The argument that we can even *begin* to compare Ontario to Europe is not only false, it borders on the ludicrous.

Unlike Ontario, Europe has in place a detailed policy framework outlining how incineration (and all other types of waste management) should be used for getting rid of garbage.<sup>218</sup> The priorities of this framework are set out in a waste hierarchy, which spells out very clearly the most preferred to least preferred ways to manage garbage. In the hierarchy, prevention and diversion efforts (reduce, recycle, re-use) are emphasized whereas landfill and incineration are to be used only for waste that is *truly* residual.

Also unlike Ontario, the European Union has set very strict regulations around incineration, including applications and permits, delivery and reception of waste, operating conditions, air emission limit values, waste water discharges, handling of residues, control and monitoring, measurement of pollutants, access to information, public participation and abnormal operating conditions.<sup>219</sup>

Unlike Ontario, Europe has in place policies and regulations incorporating extended producer responsibility and setting out packaging requirements and restrictions.<sup>220</sup>

I'll let Maureen-Carter Whitney round out my argument because she has done such a good job of it:

"Incineration may or may not turn out to be an appropriate technology for Ontario, but this determination should only be made once an overarching waste management policy for the province is put into place. *Waste management must be lead by policy, not technology* [emphasis mine]. Municipalities deserve strong provincial direction and should demand, along with other key stakeholders, a strong and comprehensive waste management strategy and regulatory framework, with funding to support that strategy ... The Europe example is valuable to Ontario not because incineration is widely used but because it is used within a comprehensive waste management framework."<sup>221</sup>

## **IS DURHAM REGION DOOMED TO MAKE THE SAME MISTAKES? (A LITTLE BIT OF A HISTORY LESSON) <sup>222</sup>**

Although you may be skeptical, learning a little bit about the history of incinerators in Europe and the US is quite fascinating, especially in that it looks like Durham Region – and possibly Ontario – is about to make the very same mistakes rather than learning from history and taking a different direction to tackle the garbage problem. And just to make things interesting, I have thrown in a little bit of information about Japan as well.

### **The US History Lesson**

The building of incinerators in the US started in the 1970's, although the 'binge' of building didn't happen until the 1980's. It seems that the US stampede to incineration was instigated by a number of factors in the early 1980's, the most pressing of which was the panic that they were running out of landfill space. "It's a garbage crisis!" was the call.

Other factors that influenced the rush to incineration included the prospect of creating saleable energy, tax breaks at the state and federal level and the collapse of the nuclear power industry. By the 1980's 142 plants were burning about 30 million tons of trash per year (16% of the trash produced by the entire country).

The sad part of the story is that while incinerators were built in the 1970's and 1980's, emission standards to regulate the industry weren't brought in until 1987, and even then, the regulations were brought into force because of public pressure – not the government's desire to protect its citizens and the environment. Public pressure grew and by the mid-1990's residents in communities across the US had stopped 300 more incinerators from being built.

But there's more. The financial side of incineration turned out to be a disaster. As the Wall Street Journal reported: "Very simply, the current economics were terrible, requiring residential and commercial customers – as well as taxpayers – to pay hundreds of millions of dollars a year over and above the going market rate for trash disposal."

It also turned out that the so-called landfill crisis was just that – so-called. And in an interesting twist, some of the companies that sold incinerators in the US then turned around and opened landfills as well. A nifty arrangement, they offered lower fees than the incinerators they had built, effectively making money twice over – once for disposing of trash in landfills and once by demanding that municipalities pay their contract obligations whether or not they had enough trash to burn in the incinerator (which they didn't, because the garbage started going to landfill again).

Government officials in the US finally realized that incinerators were too costly and too dangerous to build. Their love affair with incinerators is nowhere near as passionate in the US now as it was 20 or 30 years ago.

### **So Then They Set Their Targets on Europe?**

It may be a coincidence, but the increase in the building of incinerators in Europe took place in the 1990's, just about the time that the US love affair with them had ended.

The increase in the building of incinerators came about due to restrictions that the European Union put on landfill. In a bit of a panic over this dilemma (it's a crisis, where will we put the garbage?!), European communities embraced the only waste alternative that was more adverse to the health of its citizens and environment than landfills – incineration.

What is interesting is that the European Union didn't ban landfills, it banned *bad* landfills. The restriction stated that landfills had to be built in a manner that would protect surface water, ground water, the soil and air and "the global environment, including the greenhouse effect, as well as any resulting risk to human health." Ironically enough, incineration is also a threat to each of the elements outlined in the EU restrictions on landfills.

From here, the history in Europe very much mirrored that in the United States. Public pressure mounted. The Union brought in restriction. Communities realized that incinerators were financial disasters. And now, in 2007, the luster is off incinerators. Indeed, this year the European Parliament debated redefining incinerators as disposal in the 'waste hierarchy' rather than as 'recovery' – in effect making them no better than landfill.

### **Now Canada?**

So, the incineration industry is facing tremendous hurdles in the USA and in Europe. Is Canada their next target? The province of Ontario's recent move to streamline the Environmental Assessment process and make it easier for incinerators to be built in the province would seem to indicate that we haven't learned a single thing from the incineration history of Europe and the USA. And it would seem we are taking the exact same path. Here, follow along on the steps with me...

**Step 1:** Landfill crisis. This step works best if you are also able to demonize landfill and make incineration sound better (there is a reason that the industry and the politicians call incinerators "Energy-from-Waste Facilities" and *not* incinerators).

**Step 2:** Government support – this is great idea!

**Step 3:** Build a whole bunch of incinerators

**Step 4:** Experience financial disasters in host communities thanks to said incinerators and put-or-pay contracts

**Step 5:** Experience public pressure about health effects of incinerators and said financial disasters

**Step 6:** Okay, better bring in some regulations

**Step 7:** Close down those old incinerators and espouse the virtues of preventing waste, reducing, reusing, recycling, composting, public involvement and extended producer responsibility.

I wish we would just skip steps one through six and start at # 7...it would be a whole lot easier and a whole lot cheaper!

Sorry, if this may all seem a little sarcastic, but this is just the path that has been taken in the US and Europe. Why on earth would we want to do the same thing, especially when we have the perfect example of an internationally successful alternative right on our east coast? (See section *There are no alternatives to incineration.*)

### **Some Perspective from Japan**

Maybe we need some 'shock therapy.' Let me tell you about Japan.

Japan has been called the "most incinerator intensive country on Earth."<sup>223</sup> I couldn't find out how many incinerators they had at the peak of their love affair with this waste solution, but I was able to determine that protests from Japanese citizens have closed down more than 500 of these facilities. According to Dr. Paul Connett, there are now 193 incinerators operating in Japan.<sup>224</sup>

There are hundreds of groups operating across Japan in protest to incinerators and the pollutions that they pour into the air, particularly the dangerous dioxins.

What is interesting is with all of these incinerators in place, and a government that is still heavily invested in this technology, Japan is one of many Asian countries now embracing Extended Producer Responsibility (see section *There are no alternatives to incineration* for details). It would seem that even with a network of close to 200 incinerators, Japan has realized that burning garbage is not the solution and that they have to take preventative actions to stop its production in the first place.

Will we have to build 200 incinerators in Ontario before we realize the same thing? What is Southern Ontario going to look like in a few decades if this is the road that we take?

***"Those who do not learn from history are doomed to repeat it."*** (Source unknown.)

## **P.S. Incineration Is Opposed Globally**

I wanted to include this information somewhere, and this seemed like the best place. You may experience a feeling or two of déjà vu as you read on...

There has been strong opposition to incinerators in Australia, Belgium, France, Canada, Germany, Italy, Japan, the Netherlands, New Zealand, Poland, Spain, the UK, Bangladesh and many other countries both in the north and the south.<sup>225</sup>

In 2001 alone, incinerator proposals were defeated by public opposition in France, Haiti, Ireland, Poland, South Africa, Thailand, the US and Venezuela.<sup>226</sup>

In June 2002, 126 groups in 54 countries participated in the first global day of action against incineration. "Citizens from across the globe speak out against the use of incinerators to deal with the excesses of our throw-away society." Over 150 NGO delegates from 38 countries signed a declaration against incineration during the Johannesburg Summit.<sup>227</sup>

"At the policy level, citizens' efforts to legally restrict incineration have been successful in many jurisdictions in at least 15 countries."<sup>228</sup> See *Appendix 1* for a list of countries, counties, cities and municipalities that have put into place incineration bans or moratoria on incineration.

"In Japan, the most incinerator-intensive country on Earth, resistance to incineration is nearly universal, with hundreds of anti-dioxin groups operating nationwide. Public pressure has resulted in over 500 incinerators being shut in recent years, but Japanese corporations and government are still heavily invested in the incinerator industry."<sup>229</sup>

"International law is also starting to bear down upon incineration. Three principles of international law – precaution, prevention and limiting transboundary effects – conflict with incineration."<sup>230</sup>

See Appendix 1 for a listing of incinerator bans and moratoria across the globe. See Appendix 2 for a diagram illustrating protesting against incineration from across the world.

## **“SWEDEN IS REGARDED AS ONE OF THE CLEANEST COUNTRIES IN THE WORLD...” AND THEY HAVE INCINERATORS**

“The trend has been consistent – less waste must go to landfill and more must be recycled; all waste management must be environmentally safe.”

Using

“Because of the large number of hazardous substances that have been, and still are, handled, waste management continues to constitute a major environmental risk. We still know little about some of the long-term risks and effects of diffuse emissions of hazardous substances from waste handling.”

“The division of responsibility between producers and municipalities should not be changed, but cooperation between them should be further developed. It is important to monitor this cooperation and service levels.”

“The greatest benefit derived from better management of waste resources is in reducing greenhouse gases. The greatest risk posed by waste management is the risk of dispersal of hazardous substances found in the waste or formed during its treatment.”

“Efforts to develop the overall environmental strategy for non-toxic and resource-efficient natural cycles will therefore be a central feature of measures to reduce the overall environmental impact of products throughout their life cycle.”

“Waste incineration produces emissions in the form of air pollutants in flue gases and water pollutants from flue gas treatment process. The environment may also be indirectly affected by landfilling of slag and ash from incineration...Waste Incineration Ordinance entered into force in 2003...has also proposed more rigorous standards for inspection of incoming waste. Emissions have fallen sharply (95 to 99 percent since 1985 for most pollutants). Despite the rapid increase in incineration, overall emissions have continued to fall. Although emissions are low, further steps should be considered. Modified processes and thermal post-treatment of ash should be considered, so as to limit the formation of dioxins and hence the quantity of dioxins in fly ash.”

Sweden as evidence that incineration is a great solution is as flawed – if not more so - as the argument heralding Europe and the US. Sweden is even more advanced than many of its European counterparts in how it thinks about waste management. However, while Durham Region pundits have been pushing this advancement as support for incineration, it is actually the opposite of that. Sweden, even more than its European colleagues, has realized all the more the importance of waste prevention and diversion. The government of Sweden also readily admits that the present and continuing dangers that the disposal of waste – meaning landfill and incineration – pose to health and to the environment, which is why Sweden has been ever diligent in tightly regulating and monitoring waste

disposal. (How refreshing to find a government that admits that incineration presents dangers.)

Humour me and take a closer look at the quotes that I have included on the page preceding this one. You'll notice that I didn't reference any of the quotes like I did in previous sections. I didn't reference them because I wanted you to read the quotes before I gave away my little secret: Every single one of those quotes came directly from *A Strategy for Sustainable Waste Management: Sweden's Waste Plan*,<sup>231</sup> published in 2005 by the Swedish Environmental Protection Agency. (The Environmental Protection Agency in Sweden is like our Ministry of the Environment here.) Surprised?

### **GETTING TO KNOW SWEDEN'S GARBAGE**

Durham Region supporters of incineration are correct in one respect – Sweden is advanced when it comes to waste management. In fact, Sweden was the first country to formally introduce the concept of Extended Producer Responsibility in 1979 (see section *There are no alternatives to incineration* for more information).<sup>232</sup> Sweden is also far ahead of us in terms of every aspect of their waste management system.

For starters, the Sweden's waste strategy defines waste management as an environmental issue,<sup>233</sup> a revolutionary thought in and of itself. The strategy recognizes that regular, household waste can include hazardous materials, and additionally, that the incineration of such waste can unintentionally create more dangerous substances when it is incinerated. In particular, Sweden especially recognizes the prevalence and threat of dioxins resulting from incineration. As a result, strict guidelines and regulations have been set with the goal of protecting the citizens and the environment of Sweden.<sup>234</sup>

Additionally, Sweden's waste strategy requires that all regulations and monitoring requirements for incinerators (and landfills) must be evaluated on an *ongoing* basis – both to ensure that the rules are being followed and to determine whether any changes are needed. In the same way, and for the same reasons, technological developments must be diligently monitored as well.<sup>235</sup>

### **No Wasted Philosophies**

Sweden's waste management goal is sustainable development, meaning that "all political decisions are to be formulated taking into account their long-term economic, social, and environmental implications."<sup>236</sup>

The following guidelines direct Sweden's sustainable waste management policies:

- Preventative action to reduce the quantity and the hazards of wastes.<sup>237</sup>



- Detoxification of natural cycles (getting the poisons out of everyday wastes, like plastics).<sup>238</sup>
- Viewing waste as a resource, and using that resource as efficiently as possible.<sup>239</sup>
- Safe treatment of waste (i.e., ensuring methods that pose risks – incineration and landfill – are carried out safely).<sup>240</sup>

Sweden has also enshrined, in its Environmental Code, the 'rules of consideration.' These rules, which must be applied to all waste management activities, are as follows (pay close attention, Durham Region):

**Burden of proof** – Operators must demonstrate that their operations are undertaken in an environmentally responsible manner. This principle applies to current and planned operations. Those parties affected by the operations do not have to prove the opposite.<sup>241</sup> (*Plain language interpretation: You're doing it, you prove that it's safe.*)

**Competence / knowledge requirements** – Those undertaking an activity must possess the knowledge equivalent to the nature and scope of the activity, as well as the consequences and impacts that the activity might have on the environment, human health and so on.<sup>242</sup> (*Plain language interpretation: Make sure you know what the heck you're doing.*)

**Precautionary principle** – If even the possibility of danger exists, there is an obligation to take the necessary steps to combat or prevent that danger.<sup>243</sup> (*Plain language interpretation: It there is even a suspicion of danger, you have to do something about it.*)

**Location principle** – The site of an operation must be appropriate with respect to the objectives of the Code and as well as all rules concerning land and water management.<sup>244</sup> (*Plain language interpretation: You have to follow the rules and take care of our environment.*)

**Conservation and ecocycle principle** – There is a duty to conserve raw materials and energy, and to embrace any potential for reuse and recycling.<sup>245</sup> (*Plain language interpretation: Reduce, reuse, recycle.*)

**Product choice principle** – It is imperative to refrain from using or selling chemical products that may be hazardous to human health or the environment if less dangerous products can be used instead.<sup>246</sup> (*Plain language interpretation: If something safer can do the job, USE IT.*)

**Reasonableness rule** – All rules to be applied in the light of benefits and costs.<sup>247</sup> (*Plain language interpretation: Even if you follow all of these other rules, you still have to make sure it the pros outweigh the cons and that you won't go broke.*)

**Best possible technology** - The best technology is to be used.<sup>248</sup> (*Well, this one speaks for itself.*)

**The Stopping Rule** – When an operation is liable to cause substantial damage - even if the necessary precautions are taken - it must be stopped unless special reasons exist for continuing.<sup>249</sup> (*Plain language interpretation: If you might be - or are - hurting someone, STOP.*)

**Polluter pays principle** – It is always the person who causes or is liable to cause an environmental impact who must pay for the preventive or remedial measures that must be taken in order to meet the terms of these general rules of consideration.<sup>250</sup> (*Plain language interpretation: You break it, you've bought it.*)

Durham Region has a long way to go before it comes close to following these rules. For this reason alone, we should never even consider comparing ourselves to Sweden.

### **A Mission and a Goal (or two)**

Sweden is also very different from Durham Region in that:

- Producers have been made more responsible for dealing with packaging, newspapers, tires, cars and electrical and electronic waste. These requirements include importers, manufacturers and distributors.<sup>251</sup>
- In-depth extended producer responsibility requirements are undergoing constant development and improvement.<sup>252</sup>
- Evermore demanding recovery and recycling targets are being adopted.<sup>253</sup>
- Goals have been set to compost all food wastes, including those from restaurants, institutional catering and shops.<sup>254</sup>
- Goals have been set to reduce hazardous waste including product labelling (regarding health and environmental risks), the phasing out of particularly hazardous substances and the reduction of the manufacture and use of chemicals that pose risks to health and environment.<sup>255</sup>
- Goals have been set to reduce the occurrence and use of chemicals that hinder recycling.<sup>256</sup>

### **One final reason why we can't compare ourselves to Sweden**

I found these numbers of particular interest. Sweden's annual CO<sub>2</sub> (carbon dioxide) emissions per capita are 5.98 tons<sup>257</sup>; Canada's are 23.68 tons.<sup>258</sup> I would hazard a guess that Ontario - at least Southern Ontario - would hit the high side of this average for our country. Even if all things were equal between Canada and Sweden, here in Canada we obviously have much more of a burden of pollution and adding more to it - even if we reproduce everything exactly as they have in Sweden - is just darn right crazy (not to mention breaking most of the rules in the code above).

### **What is *really* needed in Ontario?**

I'll let Maureen Carter-Whitney wrap up for me again - she does such a good job of it.

"These recent decisions [by the Ontario government to streamline environmental assessments for incinerators] have been made in absence of any strong policy leadership from the provincial government regarding how to best manage waste throughout the province. Without the province's leadership, waste management decisions may be made reactively and on a patchwork basis, without an overall, long-term, sustainable vision."<sup>259</sup>

### **Not even Sweden is perfect**

If it will help you to feel better, not even Sweden is perfect. Consider these little tidbits...

- Fly ash landfill is not permitted in Sweden (because the chloride concentrations exceed current limit values) so they export it to other countries. If (EU) regulations come into place banning the export of fly ash, which is toxic, those regulations will have significant repercussions in Sweden.<sup>260</sup>
- Some jurisdictions, like Sweden, have had to actually *import* waste to keep incinerators going.<sup>261</sup>
- In 2006, Sweden passed legislation to tax the incineration of municipal waste in order to encourage recycling.<sup>262</sup>
- According to government reports on waste management, Sweden has a recycling rate of just over 40%: "For instance, approximately 43.4 per cent of household waste underwent materials recovery in 2004."<sup>263</sup>

- Despite all of the precautions that Sweden has in place, look at what is put into their atmosphere every year thanks to their 29 incinerators:

In 2004, Sweden's 29 incinerators produced emissions made up of 1,707 tons of nitrogen oxide, 337 tons of sulphur oxide, 24 tons of particulates, 101 tons of hydrogen chloride, 37 kg of mercury, 5 kg of cadmium, 54 kg of lead and .7 grams per year of dioxins.<sup>264</sup>

Now, if we do the math and divide these numbers by 29 (the number of incinerators in Sweden) we get a rough idea of how much pollution comes from one incinerator: 58 tons of nitrogen oxide, 11.5 tons of sulphur oxide, .82 tons of particulates, 3.5 tons of hydrogen chloride, 1.3 kg of mercury, .17 kg of cadmium, 1.8 kg of lead and .024 grams of dioxins.

Between 2004 and 2006 Sweden saw these **increases** in emissions from its 29 incinerators:<sup>265</sup>

- Nitrogen oxide up 28% to 2,180 tons or 75.17 tons per incinerator
- Particulates up 38% to 33 tons or 1.14 tons per incinerator
- Mercury up 5% to 39 tons or 1.34 kg per incinerator
- Dioxins up 14% to .8 grams or .03 grams per incinerator
- Cadmium up 300% to 15 kg or .52 kg per incinerator

To be fair, we should share with you the *all* measurements from 2006 not just those that increased - even though Mr. Schonning from the Swedish Embassy couldn't show us the same courtesy and shared the above 2006 figures with *neither* Durham Region Council (when he presented on January 23, 2008) *nor* Clarington Council when he presented to them a short time later.

<b>Swedish Emissions</b>	<b>2004 figures</b>	<b>2006 figures</b>
Particulate (tons per year)	24	33
Hydrogen chloride (tons per year)	101	55
Sulphur oxide (tons per year)	337	175
Nitrogen oxide (tons per year)	1707	2180
Mercury (kg per year)	37	39
Cadmium (kg per year)	5	15
Lead (kg per year)	54	54
Dioxin (g per year)	.7	.8

*Reference for all figures in this table (above): Swedish Association of Waste Management RVF 1998-2005, Svensk avfallshantering 1998 - 2005.*

## INCINERATION IS SAFE

“There are no certainties in pinning specific health effects on incineration: the report makes that clear. However, this is largely because of the complexity of exposure of the human race to many influences. The fact that ‘proof’ of cause and effect are hard to come by is the main defence used by those who would prefer the status quo. However, the weight of evidence, collected within this report, is sufficient in the authors’ opinion to call for the phasing out of incineration as a way of dealing with our waste. I agree with that.”

*Vyvyyan Howard, Professor of Biomanaging, Centre for Molecular Biosciences, University of Ulster (4)*

“Once again, it can be hard to demonstrate [the effects of persistent organic pollutants on health] beyond challenge. But unless precautionary action is taken to curtail these chemicals, millions of people – not to mention millions of other creatures ranging from lake trout to pigeons – are likely to suffer irreparable harm....

In court, a person is innocent until proven guilty. Chemicals suspected of bio-accumulating, persisting in the environment, and harming human beings and animals do not deserve that kind of protection.”

*United Nations Environment Program (UNEP)  
& UNEP’s Information Unit for Conventions (71)*

“Waste incinerators do not eliminate waste – in fact, they generate it...An incinerator actually transforms the original wasted materials (or resources) into several new forms of waste: air emissions, ash and liquid discharge...These new forms are far more difficult to deal with than the original, raw wasted materials.”

*Zero Waste New Zealand (76)*

“Specifically, recycling compared with disposal [i.e., incineration and landfill] reduces potential impacts of solid waste management activities on all public health and environmental impact categories examined – global warming, acidification, eutrophication, human health effects from criteria air pollutants, human toxicity and environmental toxicity...recycling is environmentally preferable to disposal by a substantial margin.”

*Maureen Carter-Whitney, Canadian  
Institute for Environmental Law and Policy (213)*

“Dioxins, furans and polychlorinated byphenyls (PCDD, PCDF and PCBs) are a group of toxic chemicals that persist in the environment, bio-accumulate through the food chain and pose a risk of adverse effects to human health and the environment. They can cause impairment of the immune system, the nervous system, the endocrine system, and the reproductive functions, and are also suspected of causing cancer. Foetuses and newborn children are most sensitive to the exposure. There is considerable public, political and scientific concern over the negative effects on human health and the environment of long-term exposure to even the smallest amounts of dioxins, furans and PCBs.”

*European Union directive (257)*

The issue of health, and the threat that incinerators pose to health, has been one of the most hotly debated in the Durham Region waste battle. While opponents warn of the dangers that incineration poses for all life in the Region, supporters seem to have 'all the answers' when it comes to assuring us there is no threat whatsoever.

Proponents of Durham Region insist that incinerators are safe because they are "state-of-the-art" (see the next section for comments on this claim) and have technologies in place to filter out all dangerous emissions. But the fact of the matter is that no amount of technology can make incineration safe.

Even assuming that the best technology is as good as they say, that our incinerator would have that technology, and that that technology would always work and always be used, there are pollutants that can escape the technology – and those particles are the most dangerous of all. Even with 100% efficiency in the smokestack (and that 100% doesn't exist) there are still fugitive emissions to tackle – emissions that find their way into the environment but escape the incinerator through means other than release through the smokestack.<sup>266</sup> There is by no means a perfect technology and there is by all means a tremendous threat.

## **THE NATURE OF EMISSIONS (AND ASH)**

### **A Little Lesson In Nanos**

There are these very, very, very tiny ultrafine particles (also called particulates) released from incineration called nanoparticles. These particles are so tiny – less than 2.5 micrometers in diameter - that they can escape most filtering technologies. With even the best technology that money can buy (which isn't necessarily what Durham Region will be purchasing), it is estimated that incinerator filters capture only 5% to 30% of these particles *at the most*.<sup>267</sup> Imagine putting salt through a colander and you'll get an idea of what happens when filters are used to stop nanoparticles.

Nanoparticles are released into the atmosphere and they can travel great distances because of their size. They pose a particular threat because our natural filter – the nose – cannot filter out nanoparticles any better than an incinerator filter. Bypassing the nose, the nanoparticles lodge in the lungs and can enter the bloodstream. There they can wreak havoc at a molecular level.<sup>268</sup>

Nanoparticles are especially dangerous because we don't know a lot about them. There are 100's of unknown particles (for which we have no emissions standards – how can we?) released through incineration along with those 100's that we know about (see *Appendix 3*). And the nature of emissions is constantly changing because our waste is constantly changing.<sup>269</sup> To make the matter more complicated, we know even less about what happens when we mix these pollutants.<sup>270</sup> Combined they can present us with all new varieties of threat that we can't even begin to understand.

In addition to the particles that come from the waste we burn, are those that are created in the process of burning. Intense heat helps to create a whole new type of particle that may be nothing like that that existing in the garbage that is being burned. As Pat Thomas aptly puts it, "Indeed, the way that incineration changes the seen into the unseen and the known into the unknown is one of its most dangerous consequences."<sup>271</sup>

There is no question, these nanoparticles are very dangerous to our health and no matter how good the incinerator technology is, they cannot be stopped.

"...some of the most important constituents are considered to be particulates, heavy metals and combustion products of man-made chemicals...Particulates, or particulate matter (PM) is a complex mixture of organic and inorganic particles that can be solid, liquid, or both, suspended in the air. There is a large, and increasing, body of research highlighting the health dangers of particulates found in incinerator emissions."<sup>272</sup>

### **Dioxin (& Furan) Primer**

You have probably heard more about dioxins than any other pollutant discussed in the incinerator debate. Proponents will tell you that filtering technology in Sweden has done an amazing job of stopping dioxins from escaping the incinerator smokestack. True, Sweden has significantly cut down on its emissions of dioxin. But also true, dioxins are *still* released into the Swedish environment by incinerators – and many more are released by incinerators worldwide that don't have the extensive controls in place as does Sweden (see section *Sweden is regarded as one of the cleanest countries in the world and they have incinerators*). And because dioxins are toxic to the power of 1 to 1 trillion (as in, 12 zeroes), nobody should treat their threat lightly.

There are more than 75 different known forms of dioxin and 135 different known forms of furans.<sup>273</sup> Both are considered Persistent Organic Pollutants (POPs for short) and have been targeted for elimination by the United Nation's Stockholm Convention because of the threats they pose to all life. (The Stockholm Convention was brought into force when it was signed by the 50<sup>th</sup> country in 2004. It is a global, legally binding agreement that outlaws the production, use and release of toxic substances like dioxins and furans.)<sup>274</sup>

Consider this information:

"Dioxins repeatedly cause cancer in virtually all studies in experimental animals at doses well below those which are otherwise toxic. Dioxins are 'potent cancer promoters.'"<sup>275</sup> Studies have also strongly linked dioxins with endometriosis<sup>276</sup> - which in turn has been linked to many other health problems, including fibromyalgia, chronic fatigue syndrome, autoimmune or endocrine disease, hypothyroidism, systemic lupus erythematosus, Sjögren's Syndrome, rheumatoid arthritis, multiple sclerosis, asthma and eczema.<sup>277</sup>

"By disrupting hormone receptor sites, dioxin can literally change the functioning and reproduction of our cells. There is no safe dose; our own bodies have no defence against it - it acts at a molecular level, exhibiting toxic effects at concentrations of one part per trillion - a drop in 300 Olympic-sized swimming pools."<sup>278</sup>

"...they [Persistent Organic Pollutants (POPs) like dioxins and furans] evaporate and travel long distances *through the air and water*...in a process known as 'grasshopper effect', these chemicals jump around the globe, evaporating in warm places, riding the wind and particles of dust, settling to Earth in cooler spots, and then vaporizing and moving on again...[there is a] general drift of these pollutants toward the Poles and mountain areas [cooler areas]...Indigenous people in the Arctic ... thus have some of the highest recorded levels of POPs. Yet they are *hundreds or thousands of kilometres* from where these pesticides and industrial chemicals are released, and they certainly received little benefit from the chemicals' original use." [Emphasis mine]<sup>279</sup>



### **And All The Others...**

In the fervour over nanoparticles, dioxins and furans, we can forget that there are 100's of other chemicals and pollutants released in the emissions of incinerators. Metals are one such pollutant, including mercury, lead, arsenic, chromium and cadmium. Again, because these metals are released as microscopic particles, they can penetrate deep into the lungs and enter the bloodstream. From the blood, the metals are moved into the organs and tissues of the body.<sup>280</sup> Chemicals are fat soluble and accumulate in the fatty organs and tissues as well.<sup>281</sup>

Typical incinerator emissions also include "acid gasses, particulate matter, carbon monoxide, nitrogen oxides, metals, dioxins and furans, other persistent organic pollutants...and at least 190 volatile organic compounds. Many of these pollutants are known to be persistent [very hard to get rid of], cumulative [they accumulate because they are persistent] and toxic [pose serious risk to health and the environment]. They cause a variety of adverse health effects..."<sup>282</sup>

### **SAFER EMISSIONS, DEADLIER ASHES**

The conundrum for the incinerator is this: The safer the emissions, the more deadly the ash.<sup>283</sup> All incinerators create ash as a result of the burning process. Bottom ash makes up the majority of that residue but fly ash is the most toxic. Fly ash is considered hazardous waste and must be disposed of in specially designed, hazardous waste landfills. Even then, the ash presents unknown hazards in the landfill because, as with the emissions, its make-up is largely unknown.

(Sweden considers fly ash so toxic that it has banned its being landfilled ... at least in Sweden. They export their ash to other countries so they don't break their own rules.<sup>284</sup>)

One way of reducing toxic fly ash is vitrification. Ash is sent directly to a melting furnace, where the ash is fired into small, glass-like pebbles. "By enclosing heavy metals in a hard, physical matrix, vitrification significantly reduces their biological availability and rate at which they can re-enter the environment." Deterrent is expense – vitrification raises the cost to burn trash by \$20 to \$30 per ton of waste. Also, vitrification consumes more energy than is generated by burning the trash in the first place.<sup>285</sup>

## **THE HEALTH IMPACTS OF INCINERATION**

Following is a list of the health problems that have been linked to the emissions and ash of incinerators.

- Allergies<sup>286</sup>
- Alzheimer's disease<sup>287</sup>
- Asthma<sup>288</sup>
- Autism<sup>289</sup>
- Cancer<sup>290</sup>
- Cardiovascular disease and deaths<sup>291</sup>
- Chronic fatigue syndrome<sup>292</sup>
- Decreased sperm count<sup>293</sup>
- Dementia<sup>294</sup>
- Diabetes type 2<sup>295</sup>
- Endocrine system disruption<sup>296</sup>
- Dyslexia<sup>297</sup>
- Endometriosis<sup>298</sup>
- Genital deformation / birth defects<sup>299</sup>
- Growth disruption<sup>300</sup>
- Immune system disruption / damage<sup>301</sup>
- Kidney damage / disease<sup>302</sup>
- Learning difficulties<sup>303</sup>
- Liver damage<sup>304</sup>
- Lower intelligence levels<sup>305</sup>
- Morbidity / mortality<sup>306</sup>
- Multiple Sclerosis<sup>307</sup>
- Nervous system damage<sup>308</sup>
- Nervous disorders / depression<sup>309</sup>
- Parkinson's disease<sup>310</sup>
- Premature deaths<sup>311</sup>
- Reduction of short-term memory<sup>312</sup>
- Reproductive system abnormalities<sup>313</sup>
- Respiratory disease and deaths<sup>314</sup>
- Shorter attention span / Attention Deficit Disorder / ADHD<sup>315</sup>

### **Threats to the Unborn Child and Breastfeeding Infant**

It is important to note when looking at this list that the unborn child and breastfeeding infant are most at risk<sup>316</sup> because they can take in "50 times more pollutants than adults relative to their weight<sup>317</sup>".

## RESEARCH REFERENCED BY OPPONENTS TO THE INCINERATOR IS OUT OF DATE WITH THE TECHNOLOGY THAT WE WOULD USE

"A new incinerator with new technology today will be an old incinerator with old technology tomorrow."

*Judy Cooper, Bowmanville in a letter to the editor, This Week (186)*

"Whenever an incinerator company wants to persuade local communities to invest in a new incinerator plant, they often attempt to sell it by claiming it is 'state of the art,' meaning that it is equipped with the latest pollution control devices."

*Global Alliance for Incinerator Alternatives / Global Anti-Incineration Alliance (37)*

"Most modern incineration technologies designed to reduce air pollution simply move the toxics to the ash. As the air emissions get cleaner, the ash gets more toxic and the ash is rarely handled in the strictly controlled manner it should be...Ironically, if specially designed landfills were built to handle the ash, they would drastically increase the cost of incineration while only delaying the environmental impact of toxic ash..."

"... Neither high temperatures nor pollution control equipment can make incinerators safe."

*Brenda A. Platt, Institute for Local Self-Reliance (70)*

"There is little certainty about how much these technologies have improved and there is an incomplete understanding in the first place of how incineration technologies, new and old, impact human health ... No official attempts have been made to assess the effects of emissions on long-term health..."

*Maureen Carter-Whitney, Canadian Institute for Environmental Law & Policy (213)*

"Monitoring of incinerators has been unsatisfactory in the lack of rigor, the infrequency of monitoring, the small number of compounds measured, the levels deemed acceptable, and the absence of biological monitoring. Approval of new installations has depended on modelling data, [which are] supposed to be scientific measures of safety, even though the method used has no more than 30% accuracy and ignores the important problem of secondary particulates."

*Dr. Jeremy Thompson & Dr. Honor Anthony (4)*

"One of the principle means for reducing dioxin and mercury emissions to the air is combining activated carbon injection with fabric filters. Dioxin particles are too small to be stopped by ordinary filters and mercury is generally in gaseous form. So carbon particles are injected into the exhaust gas...; the carbon provides a good surface upon which mercury can condense and dioxin particles can form as the exhaust gas cools. The carbon particles themselves are sufficiently large to be trapped by the fabric filters. This is effective in reducing air emissions; but carbon particles prove to be so effective at inducing dioxin formation that that total dioxin formation is increased by up to 30% in the presence of carbon injection. Carbon injections decrease air emissions, but cause the fly ash (trapped in carbon particles) to contain much more dioxins that would have otherwise escaped up the stack."

*Global Alliance for Incinerator Alternative / Global Anti-Incineration Alliance (34)*

The strategy is an interesting one: If anyone opposing the incinerator brings up research that illustrates the dangers of incineration, just say those are 'old' studies and the technology you'd use today is so state-of-the-art that that fact alone should vanquish any and all concerns. What a great way to beat each and every argument without even having to prove that your claim is actually true.

And then a wise friend of mine pointed out something that effectively annihilates this whole crazy line of reasoning:

"If the technology is so new that there is no research on it, then all that tells us is that the technology is unproven."

Yes, my friend Donna was absolutely right. Just because a new technology exists:

- Doesn't mean it works.
- Doesn't mean it's any better than the so-called 'old' technologies.
- Doesn't mean it will *stay* new (see my quotes on the preceding page).
- Doesn't mean Durham Region will adopt it.
- Doesn't mean, if Durham Region does adopt it, that it will be used. (See the next section for some interesting information pertaining to this point.)
- Doesn't mean that we'll be safe - after all there are no guidelines or emissions requirements for many of the components that come out of incinerators. How can there be when many are unknown? Drs. Jeremy Thompson and Honor Anthony indicate that the effects of 88 to 90% of chemicals and pollutants in incinerator emissions are unknown.<sup>318</sup> And what we do know about incineration emissions is not good - see the previous section for verification of this statement.

Another thought I had: If incineration technology changes so quickly then how will one upgrade after 20 years be enough? Because that is what Durham Region is planning for financially - one upgrade after 20 years.<sup>319</sup>

### **THE VERY REAL LIMITATIONS OF EMISSIONS MONITORING**

Drs. Jeremy Thompson and Honor Anthony, of the British Society for Ecological Medicine, have outlined a number of limitations to emissions monitoring that make the type of technology in place moot at best. I'll give them the floor...

- It is vital to measure not just the pollutants in the stack, but also the pollutants in the air. To achieve a 25% sampling rate, which should be the minimum acceptable, you'd require at least 24 monitors placed at strategic points around the facility. Typically there are less than three. And

measurements of heavy metals - other than lead - are not usually done.<sup>320</sup> This latter point is of particular concern considering that emissions are known to also contain the metals of mercury, arsenic, chromium and cadmium.<sup>321</sup>

- Measuring concentrations in the stack at one point of time gives virtually *no* information about the total amount of exposure that people experience. This is because pollutants emitted by incinerators accumulate slowly in people in the vicinity. Chronic toxicity is a risk if pollutants are accumulated faster than released, particularly heavy metals and POPs (Persistent Organic Pollutants).<sup>322</sup>
- There's been no attempt to measure health effects of this accumulation of chemicals – to do so, we would have to measure toxic levels in people's bodies over time and then measure health effects. "Testing of body burdens is therefore an essential part of monitoring." "...toxic accumulation is likely in almost everyone exposed to incinerator emissions..."<sup>323</sup>
- Safety levels rely on animal studies, which underestimate the risk because of the difficulty in testing cognitive, behavioural, language deficiencies and conditions such as fatigue in non-humans. In cases of lead, mercury and PCBs, animal studies have underestimated the neurotoxic effects on humans by a factor of 100 to 10,000 times.<sup>324</sup>
- Safety levels apply only to adults. Spot checking doesn't address exposure at critical times, for example, during foetal growth or infancy. The unborn child and the breastfeeding infant are much more at risk and exposure is much more likely to cause permanent damage than it is to adults.<sup>325</sup>
- None of the safety limits has been demonstrated to protect against foetal damage.<sup>326</sup>
- Many chemicals produce different effects at low doses than at high doses. "This shows how very little we know about the dangers of exposing people to chemical pollution."<sup>327</sup>

The Doctors also point out that the monitoring of incinerations should include random, non-announced visits that incorporate:

- More monitoring around incinerators to measure particulates and heavy metals.<sup>328</sup>
- Periodic monitoring of the content of dust in homes in the locality.<sup>329</sup>
- Periodic monitoring of heavy metals and dioxins in fly ash.<sup>330</sup>
- A program of monitoring the body burdens of some key pollutants in local inhabitants.<sup>331</sup>

## **WE ARE PROTECTED BY THE MINISTRY OF ENVIRONMENT / THE GOVERNMENT**

In this section, my argument is fairly straight forward – we are not, nor will we ever be, protected from incinerator emissions. I will illustrate this argument by again turning to the those who know and sharing with you their knowledge and experience.

### **THOUGHTS ON THE MINISTRY OF THE ENVIRONMENT**

“Ontario guidelines are terribly dangerous. They are rate based, not health based. For example, take dioxin: the emissions [at the Peel incinerator] are within the governments guidelines, but exceed tolerance levels set by health organisations.”<sup>332</sup>

“Our members [referring to Durham Regional Councillors] have said that scrubbers placed on the units control the emissions being released and they will also show you data on how these units do not emit anything above the allowable amount permitted by the Ministry of the Environment. They do not register nanoparticles, smaller than one micron, that are not captured by the pollution control devices. These pollutants travel long distances and can penetrate deep into the lungs.”<sup>333</sup>

Sarnia is the most polluted area in Ontario due to smokestack emissions. Plants are often located near housing without much of a buffer zone to protect them from industry. The Ministry of the Environment has said that the province plans to place more air monitoring equipment in the area and in 2005, they tightened pollution standards. Unfortunately these measures are too late for many local residents. Recent studies have shown that women between 25 and 40 in the area have double the rate of leukemia than in the rest of the province.<sup>334</sup>

“So-called ‘state-of-the-art’ incinerators do emit pollutants. High temperatures and costly pollution control equipment do not make them safe. ‘State-of-the-art’ pollution control devices do not eliminate or adequately control toxic emissions from the chemical complex that constitute today’s discards. Adding to this concern, Ontario’s air emissions regulations are rather dismal compared to other areas in North America.”<sup>335</sup>

“The risk assessment [for the Durham incinerator] was based almost entirely on Ontario regulations,’ she said. ‘Many, including doctorates, say these regulations have not served us well.’”<sup>336</sup>

"In the late 1980's residents tried to shut down [an] incineration facility in Hamilton because of significant emissions posing a health risk to the community. [The facility] created as much as 30 tonnes of fly ash daily. MOE was allowing the facility to operate under approval that had been issued in 1972 when the facility first opened, without any restrictive conditions, not reflecting current environmental standards." The facility finally closed in 2002.<sup>337</sup>

### **WHO WAS PROTECTING THEM?**

"Our [dioxin] analysis of human milk and fish from the Baltic indicated we are in trouble, very great trouble. In fact...we found babies were consuming [dioxins at] levels 50-200 times over the daily limit we accept. And in other European countries, we are convinced the levels are higher. Nobody knows how to burn garbage without producing dioxin...the technical development at work at incinerator plants has hitherto mostly been of the trial and error type."<sup>338</sup> Olle Aslander, Dioxin Research Coordinator of the Swedish Environmental Protection Board

"'Creative' attempts at disposal [of ash] have included spreading ash on allotments and footpaths, as was the case in the late 1990's when decades of this 'recycling' of mixed fly ash and bottom ash from the Byker incinerator in Newcastle resulted in the worst dioxin contamination ever seen in a local area. Ash samples were found to contain 1,950 nanograms of carcinogenic dioxins, massively above the five nanograms they would have expected to find in a polluted area."<sup>339</sup> City Council called the local citizen who first arranged for testing of the ash, "alarmist and scare mongering". Test results also showed dangerously high levels of arsenic, mercury, and lead."<sup>340</sup>

"Even the monitoring systems that are available indicate that incinerator performance in practice is very different than theoretically achieved levels. For example, in the Netherlands' most modern municipal waste incinerators reported that its flue gas cleaning system was out of order during 10% of the operating time. In the UK, Greenpeace collected data on the 10 operating municipal waste incinerators that indicated that each one had regularly exceeded its permitted air emissions; one incinerator reported 95 such breaches in a single year."<sup>341</sup>

"Sleuthing from a local environmental group in Indianapolis, Indiana documented that the local modern incinerator exceeded its permitted pollutants limit more than 6,000 times, including bypassing its air pollution control devices 18 times in less than two years. The problem is magnified in countries where there are little or no regulatory control abilities."<sup>342</sup>

A report was released in France highlighting "the illegality of current waste incineration practices in France, which violate several European Directives and a law dating from 13 July 1992, placing waste incineration at the end of the waste hierarchy, after re-use and recycling. Also denounced in the report is the use of ash residues from incineration in construction applications, which not only leach toxic constituents into the soils and water but are also illegal." Suggested solution: "the ecological, health and socio-economic benefits of the alternatives to waste incineration and disposal, such as waste prevention, re-use and recycling, together with the benefits associated with dealing with waste close to home."<sup>343</sup>

Keele Street Transfer Station in Vaughn - which was run by a private company - burned down in a fire that burned smoke over a residential area for a week. The incident cost local emergency services almost a million dollars. After the fire, it was found that the station had several thousand tonnes of waste above the allowable capacity of 1,500 tonnes.<sup>344</sup>

The NESWC incinerator in Massachusetts reported itself in 1995 that it was emitting 1,300 grams of dioxins each year, which is ten times the allowable limit set by the EPA. The plant wasn't shut down however due to delays in regulations taking effect.<sup>345</sup>

"The Detroit incinerator is permitted to release 3.6 million pounds of regulated toxins per year. More than 50,000 pounds of these legal pollutants are classified as hazardous, including lead, mercury, cadmium, chromium and hydrogen chloride."<sup>346</sup>

### **CAN WE TRUST THEM?**

"Much of airborne emissions data comes from measurements made under ideal conditions, for example, when the plant is new or when operators are seeking to obtain their operating permits. Companies know exactly when they are going to be tested and can ensure that their most qualified operators and engineers are present to achieve optimum conditions... in the Netherlands, one study showed that the standard six-hour test for dioxin emissions from a modern incinerator actually underestimated dioxin emissions by a factor of 30 to 50."<sup>347</sup>

"At optimum operating levels, these emissions are small, but incinerators rarely perform at optimum, or even required, standards. Emission violations and malfunctions are common even at new, state-of-the-art incinerators due to mechanical and operational problems, and it is 'technically remote to achieve even 80% continuous compliance' with air emission regulations."<sup>348</sup>



"Dioxin emissions are not constant. Most incinerators see 'spikes' of dioxin emissions during warm-up, when the furnace is just starting; during shutdowns; and during 'upset conditions.'" Upset conditions can be anything from a batch of wet trash that causes furnace temperatures to dip to an out-of-control fire or explosion.<sup>349</sup>

## **LANDFILLS ARE BAD AND / OR WORSE THAN INCINERATION**

“Often decision-makers are misled by industry claims that there is a 90 percent volume reduction when garbage is burned in an incinerator and conclude that their landfill space will stretch 10 times further. This is not the case. The 90 percent figure refers to a comparison between the waste entering the incinerator and the ash leaving it. It does not include waste that cannot be burned (building debris, old appliances etc.) or that is missed when a facility closes down for repairs, and does not take account of compaction in the landfill. When such factors are taken into account, an incinerator saves somewhere between 60 and 70 percent of the volume; the landfill space is stretched only 2.5 to three times, not the tenfold increase sometimes implied by promoters of incineration.”

*Global Alliance for Incinerator Alternative / Global Anti Incinerator Alliance (36)*

“Interestingly it [study on energy saved through methods of waste management] also suggested that landfill is better than incineration for plastics and some papers (for example, newspaper) because the carbon is trapped in the landfill rather than released in the environment.”

*Friends of the Earth Scotland (31)*

“The World Bank estimates that the cost of incineration is ‘an order of magnitude greater than’ landfilling.”

*David Suzuki Foundation (17)*

“Several studies have calculated the total social cost of incineration and landfill, and their findings show that most of the time incineration costs are much higher than landfill. One independent study writes, ‘The net private cost of WTE plants [incinerators] is so much higher than for landfill that it is hard to understand the rationale behind the current hierarchical approach towards final waste disposal methods in the EU. Landfilling with energy recovery is much cheaper, even though energy efficiency is considerably lower than that of a WTE plant [incinerator]’”

*David Suzuki Foundation (17)*

“Ash landfills are for more dangerous and toxic chemicals than raw trash landfills. Incinerator ash is extremely hazardous...ash landfills are a legacy of poison that must be monitored for eternity.”

*Jonathan Campbell, Health Consultant (172)*

A vital component to pushing the incinerator agenda seems to be the demonizing of landfills and the implication – or outright declaration – that landfills are worse than incinerators. This assertion is absolute nonsense. Incinerators are simply landfills in the sky and any dangers from incineration are just as real as with landfill.

One disclaimer here ... I am not necessarily pro- or anti-landfill. I would just like us to have a fair and honest discourse.

### **CAN ANYONE SPEAK THE TRUTH?**

I would be happy if the process were at least halfway honest but consider some of the following scenarios:

Both Durham and York Region have turned down the idea of more landfill, saying that landfill is “something that the public did not want.”<sup>350</sup> It is more than a little bit ironic that ‘the public’ is making it more than clear that they really don’t want incineration, but now nobody seems to be listening. I guess what it comes down to is that the Regions only uses ‘what the public wants’ as an argument when it supports what the Region wants.

But besides all that, let’s look a little bit closer at the assertion that the public doesn’t want landfill. Is this even true? And if it is true, what question did the Regions ask the public? Did they just say, “Do you want a landfill in your back yard?” If they did, I don’t imagine we should be surprised that the answer was no. But what if they asked this question:

*Would you like a landfill in your backyard or would you rather we set up an extensive, world class municipal waste-resource system that maximizes waste prevention, reduction, reuse, recycling, composting and business development, and incorporates real public input and involvement?*

Hm, maybe then the answer would have been, “No landfill.”

Now, you might be wondering whether they asked the question, “Would you rather have a landfill or an incinerator?” I don’t know whether they did. But I am pretty sure that if they asked that question, they would have talked about all of the wonderful benefits of energy-from-waste and how wonderful the incinerator business is doing in Sweden and Europe, and how evil landfills are, etc. etc. You get my drift. The answer is worthless if the question is worthless.

Okay, stay with me here, even if the residents of Durham and York Region DID say they wanted to get rid of landfill, they did NOT say they wanted an incinerator (or at least I haven't heard or seen evidence to that effect). And regardless, Durham and York residents have now apparently changed their minds. So are we going to just dig in our heels and say, nope, it's a done deal, or are we going to listen to what the people want? It is something akin to deciding you want to buy one house and then changing your mind when you find a much better deal for the house of your dreams – but then saying, "Nope, gotta get the first one because that's what I said I wanted."

If you question that the people of Durham and York Regions are against incineration, visit <http://claringtonwatchdog.blogspot.com> and click on the petition link (right column, you'll need to scroll down a bit). As of Nov 20 there were 1,161 signatures on the petition.

### **Landfills are *not* banned in Europe!**

"I think a lot of people are surprised how many energy-from-waste facilities there are [here in Europe],' Mr. Anderson said, 'And I think they are even more surprised at the banning of landfill and the number of items not accepted in the waste stream.'<sup>351</sup>

I would like to set the record straight for once and for all, because the comment about landfills being banned in Europe is not correct. Landfills are *not* banned in Europe. True, there are taxes and there are many restrictions on what can go into a landfill - these changes helped to initiate the stampede to incinerators in Europe in the 1990's - but there are also many restrictions on incinerators. If we are going to have this landfill versus incineration argument, could we at least have an honest one?

Indeed, just year, the European Union debated the status of incineration on their 'waste hierarchy' and strongly voiced that incineration is a disposal method, not a recovery method.<sup>352</sup> This means that incineration is no better than landfill, which is at the bottom of the hierarchy.

In fact, incinerator supporters love to point out that landfill is at the bottom of the hierarchy – though that status is in limbo now. Now, how can they say that landfill is banned in Europe one minute and then say that landfill is at the bottom of the waste hierarchy the next? It can't be both. And it isn't. Landfill is allowed in Europe. It's not encouraged (neither is incineration) but it's allowed.

Here's a quote from the Swedish government to back me up...

"By the end of 2008 all sites must meet the high standard stipulated by the [Landfill] Ordinance. The Swedish EPA considers the emissions [from landfill] are generally limited. On the basis of current knowledge, the measures required by the ordinance may be regarded as sufficient to ensure suitable safe landfill."<sup>353</sup>

Secondly, let's point out that whenever the supporters of incineration talk about landfills, they talk about OLD landfill technology. But when they talk about incinerators, they talk about NEW incinerator technology. Just for the record, there is new landfill technology, too. Again, can't we be straight about this?

### **PUTTING A WRENCH IN THE ARGUMENT THAT INCINERATION IS BETTER THAN LANDFILL**

Landfill is not worse than incineration. (And even it was, that doesn't make incineration a good thing). Here are some of the reasons why (please also see the quotes I have included at the beginning of this section):

- Landfills keep their impacts local. (Of course it would be better if they had no impacts at all, but that's another discussion.) The fact is that incinerators don't. Incinerators share pollutants and toxins with neighbours far and wide.<sup>354</sup> How is that better than landfill? And because of the ease with which dioxins and other toxins travel in the air, incineration contamination is much more likely to get into our food and water supply than is landfill contamination.
- Modern incinerators don't get rid of the most toxic chemicals and pollutants – they simply transfer them from the air to the ash. The ash then has to be landfilled. Fly ash is considered hazardous waste and must be disposed of in a specialized landfill. Bottom ash is not considered toxic but has still been found to have dangerous toxins and metals in it. Bottom ash must be disposed of in landfill as well.<sup>355</sup>
- Incineration doesn't save space. Here's why:
  - o The ash has to go somewhere.
  - o Most information touting the space saving advantages of incineration don't take into account that waste in landfill compacts.<sup>356</sup>
  - o Most information touting the space saving advantages of incineration don't take into account waste that cannot be burned, such as building debris and old appliances, or waste that

is missed and automatically taken to the dump when the incinerator is shut down.<sup>357</sup>

- When these above considerations are taken into account, landfill space is stretched only 2.5 to 3 times at the most, not the ten-fold implied by those promoting incineration.<sup>358</sup> Some sources indicate the stretching is even less than 2.5 to 3 times.<sup>359</sup>
- Incineration creates more nitrogen oxide and carbon dioxide than landfill; landfill creates more methane. There is no significant difference in particulates from landfill versus incineration.<sup>360</sup>
- A traditional landfill with a 75% methane recovery rate has a similar impact on climate changes as does traditional incineration producing electricity.<sup>361</sup>
- Incineration is much more expensive than landfill.<sup>362</sup>

## THIS IS A CHOICE IS BETWEEN LANDFILL OR AN INCINERATOR

“Each delegation received the same question from Mayor Jim Abernethy, who said he was conducting a ‘poll’: are you for or against landfill? Several said they felt that was an over-simplification. ‘Mayor Abernethy,’ admonished Linda Gasser, ‘I am terribly surprised that you would ask such an overly simplified question to such a complex issue... you have not been listening to the delegations.’ Many delegations spoke of being in favour of ‘stabilized landfill,’ with truly maximized diversion and a goal of zero residual waste.

*This Week article, May 30, 2007 (115)*

“Mass burn incineration should not be considered a replacement for landfill. We do not want to move from one form of dependency to another. We need to be more innovative than that.”

*Deputy Environment Minister, Scotland, 2001 (31)*

From the beginning, it seems, supporters of the incinerator in Durham Region have framed the problem as a choice between incinerators and landfill (after, of course, establishing that landfill is evil – see previous section):

“We are just filling up holes in the ground and eventually we will run out of holes.”<sup>363</sup> Cliff Curtis, Commissioner of Works at Durham Region quoted in *This Week*

“A clean incinerator with scrubbers would help ease the garbage problem. No one wants a smelly dump in their neighbourhood.”<sup>364</sup> Mr. Gibson, a retired entrepreneur in the printing industry, quoted in *This Week*.

“It would be pretty easy to sit in front of all these folks... and say, OK, I’m not going to be a willing host,’ he said. ‘Easy to say now but I don’t know what you’re going to say in 2011 (after the Michigan border closes to Ontario trash) because you’re not going to have an answer.’” Roger Anderson speaking with Clarington Council after his remarks about Clarington voting itself an unwilling host would have no impact whatsoever on the [ea] process. Quoted in *This Week*.<sup>365</sup>

There is certain shrewdness to this strategy because it stymies opponents, who are often well versed in the dangers of landfill as well as incineration. But by framing the argument so narrowly, the fact that there is another alternative - a *better* alternative - is completely neglected. And that

alternative is waste prevention, diversion and economic development. (Please see the sections *Zero-Waste Strategies are Impossible / Impractical* and *There are no Alternatives to Incineration* for detailed information.)

Ironically, Durham Region is well on the way to succeeding in this third alternative, with recycling rates over 50% in 2006<sup>366</sup> and the town of Whitby reaching a diversion rate of 68%.<sup>367</sup> What a waste to throw everything into the fire and quash our tremendous potential.

Recycling, compared to disposal via landfill or incineration, has less of an impact on:

- Public health & human toxicity<sup>368</sup>
- The environment & environmental toxicity<sup>369</sup>
- Global warming<sup>370</sup>
- Acidification (which, among other effects, leads to acid rain)<sup>371</sup>

Recycling also by far creates more jobs<sup>372</sup> and saves / creates more energy<sup>373</sup> than either incineration or landfill.

I'll let Dr. Paul Connelly and Bill Sheehan wrap up for me this time:

"Frequently after giving a blistering attack on the idea of burning trash or of dumping it into a mega landfill, we are asked, "Well, if we can't bury it and we can't burn it, what can we do with it?" Such questioners are usually seeking an alternative technology, because they have become accustomed to salesmen that offer 'turnkey' solutions. 'Give us this much money and we will solve your trash problem with our state-of-the-art technology,' is what they are used to hearing. At the outset we have to stress that there are no magic machines that can solve the trash problem. Trash is not a high tech problem... Zero Waste is not a technology; it is a strategy and that strategy begins with better industrial design and ends with source separation of discarded products."



## **OTHER THINGS PUT DIOXINS INTO THE AIR, LIKE FOREST FIRES, FIREWORKS AND BARBEQUES!**

I didn't want to have to include this argument in my report – it is just such a silly one – but since it has been used before, I imagine that it will be used again in our local incinerator 'debate.' So I guess I'd best tackle it head on.

Let me start by asking two questions to clarify the argument:

- When saying that these activities put "more dioxins in the air than incinerators" does that mean that the activities put more dioxins in the air than an incinerator does in a day, a week, a month, a year? Knowing the answer to this question would certainly help to clarify the whole concept.
- If it is true that these activities put more dioxin in the air than incineration (and I am learning to question every statement that is made to support incineration), could it be possible that the solution is NOT to promote said activities rather than TO promote incineration?

Even without the answers to these questions, the argument is a very weak one. It is crazy that we should decide it is okay to put more dioxins in the air because there are already dioxins there! Even if emissions of dioxins from incinerators are small, they need to be weighed against what is called the 'background levels of dioxins' – the dioxins that are already in our environment and are likely to stay there.<sup>374</sup> In fact, there are no known levels of dioxins that can be considered safe,<sup>375</sup> so we shouldn't even consider adding more.

"Incinerators emit carcinogens. Particulates themselves are known to be carcinogenic, many heavy metals are known or suspected carcinogens, up to 10% of the chemical pollutants are carcinogenic and there is abundant evidence that carcinogens are far more dangerous when combined than when in isolation. Common sense dictates that it is reckless to continue to pour more carcinogens into the air at a time when cancer is steadily increasing. Recent studies suggest that we already have to cope with 65 carcinogens in food, 40 carcinogens in water and 60 carcinogens in the air we breathe. They should not be there at all. They should certainly not be increased. If we seriously want to prevent cancer it is of paramount important that we rapidly decrease the levels of all carcinogens that we are exposed to."<sup>376</sup> "...given the extreme toxicity of dioxins or the recognized impacts of particulates, any extra burden would be unacceptable."<sup>377</sup>

## THE EMISSIONS THAT YOU SEE COMING OUT OF THE STACKS ARE MOSTLY WATER VAPOUR

“Q: Will the air emissions from the thermal facility be safe?”

A: The emissions that you see coming out of the stacks of these types of thermal facilities are mostly water vapour. Thermal facilities have strict monitoring programs in place to ensure the safety and protection of human health and the environment. The air emissions from our facility will meet, or exceed, ALL of the strict guidelines and standards set out by the Ontario Ministry of the Environment.”

Taken from a public information brochure handed out at the November 10<sup>th</sup> ‘Durham Region Waste Fair’ in Courtice (275)

Wouldn't you know, just after I wrapped up this report, the incinerator proponents came up with another ridiculous argument to support their assertion that the incinerator is safe. So it's time to add another chapter!

There are many problems with the answer that has been provided to the above question so I will just go through them one by one.

1. **The response refers to emissions that you can see.** The fact of the matter is, you cannot see the dangerous pollutants and chemicals that are released in incinerator emissions. So literally, this statement may be true but it is what you cannot see that poses the threat.

For more information about what is coming out of the smoke stack, see the sections *Incineration is Safe* and *Appendix 3 – Air Emission from Incineration*.

2. **The response indicates that the emissions are 'mostly' water vapour.** Such a relative statement can mean just about anything. In fact, this statement too might technically be true. But again, the pollutants that are of the most serious danger are so small that they can escape pollutions controls so it is safe to say they'd make up a small part of the emissions, literally speaking. This does not mean, however, that they are any less toxic. And it is because they are so small that they can travel such far distances and pose a health threat beyond our own community.

For more information about what is coming out of the smoke stack, see the sections *Incineration is Safe* and *Appendix 3 – Air Emission from Incineration*.

3. ***The response states that monitoring programs will protect human health and the environment.*** Just because a monitoring system is in place:
- a. Doesn't mean it works.
  - b. Doesn't mean it will always work (i.e., the technology will quickly outdate itself).
  - c. Doesn't mean that it will be used.
  - d. Doesn't mean that we'll be safe - after all there are no guidelines or emissions requirements for many of the components that come out of incinerators. How can there be when many are unknown? Drs. Jeremy Thompson and Honor Anthony indicate that the effects of 88 to 90% of chemicals and pollutants in incinerator emissions are unknown.<sup>378</sup> And what we do know about incineration emissions is not good – see the previous section for verification of this statement.

For more information about the monitoring technology and its limitations, please see the section *Research referenced by Opponents to the Incinerator is out of date with the Technology We Would Use*.

4. ***The response implies that we will be protected by the Ministry of the Environment. It also implies an extensive regulatory framework, i.e., "...strict guidelines and standard..."***

Please see the entire section, *We are Protected by the Ministry of the Environment / the Government*, for disputes to this claim.

## INCINERATION PROVIDES AN ALTERNATIVE ENERGY SOURCE

“The proponents of incinerators claim the new breed of incinerators are not problem polluters. But the industry’s own data prove the contrary. Modern incinerators emit mercury at a rate five times higher per unit of electricity generated by coal, and greenhouse gases at a rate substantially higher than coal-fired or natural gas-fired plants...

“But this argument [that burning waste is an energy source] fails to recognize that burning garbage is a very inefficient way to generate energy. Indeed a waste incinerator generates substantially less energy that would be gained by recycling those materials instead of burning them. For example, recycling plastics conserves 10 to 25 times more the energy [than] generated by burning plastics.”

*John Jackson (209)*

“...Burning garbage is one of the most expensive ways of getting rid of trash; it is not a cheap way of producing electricity and that is a great public misconception.”

*Suzanne Elston, quoted in This Week (139)*

“All of Japan’s 193 incinerators combined produce less energy than one nuclear power station and if the United States burned all of its municipal waste it would contribute less than 1% to the country’s energy needs.”

*Dr, Paul Connett (12)*

“For every ton of material destroyed by incinerator, many more tons of raw materials must be mined, extracted, processed or distributed to manufacture a new product to take its place. More trees must be cut down to make paper. More ore must be mined for metal production. More petroleum must be processed into plastics. The environmental cost of landfilling and incineration become magnified when the environmental costs of extracting virgin materials and producing goods in the first place are taken into account.”

*Brenda A. Platt (70)*

“Recycling is a better option than incineration. It is a resource for new materials. If you burn it, you cannot use it again.”

*Sweden’s Environmental Protection Agency (239)*

“The fact is that there is no technology that can incinerate waste without producing greenhouse gases ... Premier McGuinty may be intrigued by unproven technologies that may create a few research jobs but the people of Ontario should be concerned that incineration could pump hundreds of thousands of metric tonnes of greenhouse gases into the atmosphere annually. The small amount of energy that could be produced is not worth the environmental risk or cost.”

*Solid Waste and Recycling (25)*

It turns out, as it has with all of the other pro-incineration arguments, that this one isn't true either. Incinerator opponents agree – the Energy-From-Waste label is the incineration industry's latest public relations idea – a way to make burning garbage sound like a great idea.<sup>379</sup> But it isn't. And here's why:

- Energy consumed in the creation of waste materials is lost if they are incinerated. Once the materials are lost, new production requires mining virgin materials from the earth to replace them. The energy lost by destroying these resources and by having to mine more from the earth far exceeds the energy produced by an incinerator.<sup>380</sup> Three times more energy can be saved by recycling paper over burning it, five times the energy for plastics and six times the energy for textiles.<sup>381</sup>
- Incinerators produce very little energy and what they do produce does not justify the huge costs to build and operate them<sup>382</sup> (see the next section for more details regarding the economies of incineration).
- "Reduction, reuse and recycling of materials have the smallest impact on climate change compared to any form of disposal...we know that incineration technologies are bad for climate change."<sup>383</sup>
- Incinerator proponents often over-estimate anticipated revenues from energy sales, resulting in higher than anticipated operating costs.<sup>384</sup>
- "There are no guarantees that energy revenues will continue to flow through the life of the facility."<sup>385</sup>
- Numerous US incineration projects have run into trouble because project developers overestimated projected electricity revenues or local utility companies balked at buying power from the incinerator. When revenues are lower than projected, incinerator operators pass the costs onto garbage customers through higher 'tip' fees or to electricity customers through charging artificially high prices.<sup>386</sup>
- "Simply removing and recycling the glass (not to mention the aluminium, office paper, cardboard, etc.) from one ton of garbage saves more energy than is recovered by the burning of the rest of the ton."<sup>387</sup>
- "When we compare energy producing technologies used in Ontario, incineration contributes the greatest amount of greenhouse gas emissions."<sup>388</sup>
- Creating the conditions to generate energy in an incinerator run counter to the conditions needed to decrease the formation of dioxins.<sup>389</sup>

## THIS PROJECT IS FINANCIALLY RESPONSIBLE

“In hindsight, the public sector got most of the risks and the private sector most of the rewards in building waste to energy facilities.”

*Wall Street Journal (34)*

“It is not surprising that, at present, incineration appears to be a financially attractive option for waste authorities which are hard pressed for landfill space because, at present, incineration may appear cheaper than recycling. However, incinerators could end up being expensive white elephants...[because] as emissions standards improve, costs will increase; incinerator operators may in the future find themselves liable for large litigation claims from local residents whose health has been damaged by emissions...[recycling] creates far more jobs than either landfill or incineration.”

*Friends of the Earth Scotland (31)*

[Incineration ] “... does not take into account the impact of new and less expensive diversion technologies, alternative cheaper disposal options, new regulatory requirements, changes in the composition of waste, and the impact of that the state of the economy has on waste generation.”

*David Suzuki Foundation (17)*

“Most modern incineration technologies designed to reduce air pollution simply move the toxics to the ash. As the air emissions get cleaner, the ash gets more toxic and the ash is rarely handled in the strictly controlled manner it should be...Ironically, if specially designed landfills were built to handle the ash, they would drastically increase the cost of incineration while only delaying the environmental impact of toxic ash.”

*Brenda A. Platt (70)*

It is fitting that I have left this to the end of arguments-to-counter because this one is the most ridiculous of all. Even ignoring every other bit of information that I have included in this report, this project should not go forward because incinerators are a financial disaster. Or, rather, I should say they are a financial disaster for municipalities and for taxpayers. They are a boom for the incineration industry.

## **INCINERATION COSTS THE MOST, BY FAR**

Here's the best place to start: Incineration is the most costly waste management option<sup>390</sup>, hands down. The cost to incinerate waste is at least twice the cost of landfill and many times the cost of recycling.<sup>391</sup> Incinerators also consume so much of local solid waste budgets that little money is left over for comprehensive recycling and compost programs.<sup>392</sup>

Operating expenses for incinerators are extremely high because to be efficient, they have to run 24 hours per day which means a skilled, trained crew is also needed 24 hours per day. Equipment costs are high and parts must be bought abroad. Each standard emissions test costs \$1,000 US with rigorous testing, as done in Germany and Belgium – costing about \$26,000 per stack per year.<sup>393</sup>

Incineration agreements require host communities to agree to 'put or pay' contracts whereby they have to pay tip fees for a guaranteed amount of waste, whether or not that waste is delivered to the facility. Such arrangements have proven economic ruin for many communities.<sup>394</sup> As County Commissioner Richard Schwartz, Lake County, Florida said, "We can either send garbage to the incinerator or we can send dollar bills! That's what it amounts to."<sup>395</sup> A 2000 World Bank report concluded, "when applying waste incineration, the economic risk in case of project failure is high..."<sup>396</sup>

Numerous US incineration projects have run into financial trouble because project developers overestimated projected electricity revenues or local utility companies balked at buying power from the incinerator. When revenues are lower than projected, incinerator operators pass the costs onto garbage customers through higher 'tip' fees or to electricity customers through charging artificially high prices.<sup>397</sup>

### **Just a few examples**

Here are just a few real-life examples of the financial devastation brought to communities that invested in incineration.

**Montgomery County, Maryland (US)** - Local haulers refused to pay high tipping fees and stopped delivering waste to the county incinerator. In order to attract more waste, the county lowered tip fees and increased property taxes by 55% in 1997 to make up the revenue shortfall.<sup>398</sup>

**Claremont, New Hampshire** – A dispute between a regional waste incinerator and the communities it served resulted in 29 nearby towns filing for bankruptcy. At issue, \$1.1 million in back payments owed as a result of a 20-year put or pay contract that required more garbage than they could produce. They ended up paying exorbitant fees for garbage that wasn't even theirs. They couldn't get out of contract and couldn't use other methods of garbage disposal because all of their dollars went to support the incinerator. Bankruptcy court denied Claremont's claim and they had to raise taxes to cover their incinerator debts and contracts.<sup>399</sup>

**New Jersey** – In the 1980's many counties went into debt when they issued bonds to pay for an incinerator and other facilities. Garbage – and they thought, revenue – was guaranteed because towns had to send their waste to the incinerator due to a law in place at the time they purchased the incinerator. But that law collapsed and suddenly the other towns could shop around and started sending waste to the next state, which was much cheaper. By 2000, 18 counties were struggling with debt of more than US \$1 billion and no way to generate dollars to pay it...the State had to dip into their general fund to help the counties.<sup>400</sup>

**Lake County, Florida** – Lake County is suing to extricate itself from an incinerator contract. When they signed the contract, a landfill shortage was looming. Lake County issued bonds to pay for the incinerator and upgrades and also agreed to pay \$ 1 million per year to the company re: property taxes. With the striking down of the law requiring local haulers to take trash to local incinerators, the amount of trash coming to the incinerator decreased. The total cost for the \$70 million incinerator will end up being \$200 million after expenses, loan interest and other costs are factored in. And Lake County doesn't even own the incinerator - ownership passed to the company. Lake County is now paying one of the highest per tonne costs in the state. And to make life all the more complicated, the incinerator company has declared bankruptcy!<sup>401</sup>

**Hudson Falls, New York** – Washington and Warren County residents have tried for years to get rid of a taxpayer subsidized incinerator in Hudson falls. Promoters overestimated the trash that would be brought in by local communities. Stuck in a put-or-pay contract, they are forced to bring locally subsidized trash in from other communities (the communities wouldn't pay the rates required to cover the costs of the incinerator because they had other options that were cheaper). Local residents pay different rates, among the highest in the state. When residents sued to get out of the deal, their government sued them back for affecting the bond rates that paid in part for the incinerator. In the end, case was settled and taxpayers are stuck with paying for an incinerator that has lost millions - \$3 M US in 1998 alone.<sup>402</sup>



## **INCINERATION CREATES FEWER JOBS**

Probably the most compelling financial argument against incineration is job creation. For every 10,000 metric tonnes per year of capacity in an incinerator, one job is created whereas 11 jobs are created per 10,000 metric tonnes of waste recycled.<sup>403</sup> Most of the money invested in an incinerator leaves the local community if not the province or the country whereas recycling initiatives support local industry and businesses.<sup>404</sup>

## ASSESSING THE RISK ASSESSMENT

At first glance, I wasn't even going to *try* to wade through the *Generic Human Health and Ecological Risk Assessment Study*.<sup>405</sup> I was totally intimidated by the sheer volume of information – especially those pages and pages of tables filled with rows and rows of numbers and other risk assessment 'secret codes.' How could I ever tackle that? They must know what they're talking about, right?

Then a simple but motivating thought came to mind: "Baffle them with bullshit." Could it be that this down-to-earth concept might apply to a document so vital to the health and safety of Durham Region residents?

Then I found myself motivated by this perspective:

*"Processes [in traditional risk assessment] for external engagement are typically back end and focused primarily on challenges associated with implementing risk assessment decisions. They do not include extensive external involvement in the risk assessment and risk management and deliberations themselves."*<sup>406</sup>

What this means in plain English is that risk assessments are done when someone wants to achieve an end (such as an incinerator) and is being given a hard time (usually by those who will be impacted by the decision, i.e.: The public). And if you doubt the validity of the source for this comment, it came from a review of best practices in managing the environment, prepared at the request of the Government of Ontario!

Spurred on by the challenge that this new thinking offered, and with the help of an excellent resource - *The Health Effects of Waste Incinerators* by Dr. Jeremy Thompson and Dr. Honor Anthony of the British Society of Ecological Medicine<sup>407</sup> – I decided maybe I would tackle the risk assessment.

## CRITICAL ANALYSIS OF THE ANALYSIS

A basic understanding in the critical analysis of research is that the findings don't mean anything if the research itself isn't done properly. In other words, if the method is flawed, the findings are flawed. It is not surprising to me that the risk assessment commissioned for this incinerator project found that it is 'safe' to proceed. What did surprise me is that I was able to find 18 flaws in the research method which completely invalidate this finding. Here they are:

**1. The risk assessment assumes that the chemicals and pollutants they measured are sufficient to measure the risk of an incinerator.**

This is wrong. The risk assessment identifies about 50 chemicals which they measured in their study. <sup>408</sup>A document I found identifies just over 180 chemicals and pollutants that come from incinerators. <sup>409</sup> See Appendices 3 and 4 of this report if you'd like to compare these lists yourself.

**2. The risk assessment assumes that all chemicals and pollutants being released by incinerators are known.**

This is not true. <sup>410</sup> Indeed, on top of the unknown chemicals in the products being burned, the heat of incineration creates a whole new range of unknown chemicals and pollutants <sup>411</sup> – which means we know nothing about their effects, we cannot measure them and we certainly cannot control or 'capture' them. Drs. Jeremy Thompson and Honor Anthony, mentioned above, indicate that the effects of 88 to 90% of chemicals and pollutants in incinerator emissions are unknown. <sup>412</sup> That's a lot of chemicals!

**3. The risk assessment assumes that low concentrations of chemicals and pollutants are safe concentrations.**

This is not always true. Some chemicals and pollutants are more dangerous at low levels than at high levels, and some have different effects at different levels. <sup>413</sup> Even the authors of the risk assessment admit, on page 57: "There is a very limited amount of toxicological information on the effects associated with human exposures to low levels of chemicals in the environment."<sup>414</sup> Considering this point alone, how can they conclude that an incinerator is safe for us and safe for our environment???

**4. The risk assessment assumes that safe levels exist for all chemicals and pollutants.**

<sup>415</sup> This is not true. For many chemicals there are no safe levels of exposure.

**5. The risk assessment assumes that incinerators would stay under safety levels, whether set by the government or provided through research.**

There is no guarantee that incineration plants will operate below safety levels set by the Ministry of the Environment, let alone those that come out of research. However, there is much evidence that incinerators often exceed safety limits. For more information and references to back up this statements, please see the section *We are protected by the Ministry of the Environment / the Government*.

**6. The risk assessment assumes that incinerators in Europe, Japan and the USA have “undergone rigorous site and technology selection and are considered to operate within acceptable limits within each of their respective legislative regions.”<sup>416</sup>**

It is interesting that such a grossly inaccurate statement appears on page 1 of the assessment report. If this premise (or bias?) underlies the methods and conclusions of this report, it also totally invalidates them. If you need proof of this statement – along with references to back it up – see the following sections of my report *We are protected by the Ministry of the Environment / the Government* and *There are incinerators in Europe and the US and everything is fine there*. In making this statement, the authors are also assuming that levels of emissions legislated by these regions are safe levels. History has proven that this is often not the case, particularly since the establishment of safety levels often comes *after* incinerators have been built. If you need proof of *this* statement – along with references to back it up – see the section *There are incinerators in Europe and the US and everything is fine there*.

**7. The risk assessment authors admit that there is a dearth of toxicological data (i.e., scientific proof) about chemicals and pollutants and their effects.**

On page 79, the authors identify the “lack of available toxicity information” which, among other effects, makes “uncertain” their determination of emissions as “subchronic or chronic.”<sup>417</sup> I’m not sure why they bothered to continue with their assessment after such an admission, which is also supported by research.<sup>418</sup> I should mention here that the Region’s own ‘expert’, Dr. Lesbia Smith didn’t look at any of this type of research at all (toxicological). But that’s a whole other discussion!

**8. The risk assessment doesn't indicate (at least I couldn't find it!) how many ground level receptors were used in their calculations and measures of theoretical emissions from a theoretical incinerator.**

(Receptors measure what is coming out of the smoke stack.) According to Drs. Jeremy Thompson and Honor Anthony, you need at least 24 monitors set up at strategic points around an incinerator to accurately monitor whether emissions are safe. The doctors also point out that most modern (real) incinerators have three monitors.<sup>419</sup>

**9. The risk assessment doesn't indicate (at least I couldn't find it!) the confidence level of the theoretical model used to assess risk.**

The confidence level indicates, in a percentage, how likely the results of such a theoretical model (of incinerators) are accurate to what will happen in the real world. According again to our good doctors, most risk assessment models have a confidence level of 30%. This means you'd be more likely to guess the risks of this project with the toss of a coin than by using a risk assessment 'model'.

**10. The risk assessment does not measure the effects of combined chemicals or pollutants.**

Indeed, on page 40 of the risk assessment, the authors say, "in order to assess these combined effects quantitatively, however, detailed studies of interactions between CoPC are required, and little information is available in this regard."<sup>420</sup> What this means in plain English is that incineration causes chemicals and pollutants to combine. In order to know whether these combinations are more or less safe than the individual chemicals, we need to know the risks of these combinations – and we don't.<sup>421</sup> So how on earth can it be safe to proceed?? (Remember, too, that the effects of 88 to 90% of the individual chemicals and pollutants are unknown [point 2]).

**11. The risk assessment uses an alternative method of assessing risk, but only when they find risk, and not when they don't.**

In two incidents, after finding risk to specific groups (infant of a farmer, aquatic organisms) using their theoretical model, the authors use data from an *actual* incinerator (located in Ontario) to disprove these findings of risk. This hardly seems fair. If they are going to use data from an actual incinerator to disprove risk, then why aren't they using that data to prove risk as well??

**12. The risk assessment says that it is okay for children to be at risk.**

The risk assessment did find two groups at potential risk (don't ask me why they didn't use the same method as in the point above to disprove this risk – could it be because in these two cases that strategy wouldn't result in favourable results for them?): Native / Metis infant who is breastfeeding and a Native / Metis infant who is eating fish. Apparently these risks are okay, since the report concluded that it was okay to proceed with an incinerator. The same conclusion must go for the risk identified for the belted kingfisher.

**13. The risk assessment only took into account emission particles that are above PM 2.5.**

Research has shown that the most dangerous and toxic pollutions and chemicals are below this size, and these particles usually escape even the best pollution control technology that incinerators can offer. If you need proof of this statement – along with references to back it up – please see the section *Incinerators are safe*.

**14. The risk assessment does not provide accurate information regarding the polluting of the food chain.**

Authors admit in their report that estimates were used to calculate the risk of people ingesting chemicals and pollutions by eating local foods, and that the estimates were based on "the use of assumptions regarding many factors."<sup>422</sup> Given that a significant portion of chemicals and pollutants are absorbed into our food chain<sup>423</sup> – in particular, approximately 90 to 95% of dioxins<sup>424</sup> - this is a frightening assumption. The assumption is even more frightening when you realize that these effects reach far and beyond just Durham Region and that we will be poisoning our neighbours as well as ourselves. (Farmers in our Region and beyond should be very concerned.)

**15. The risk assessment authors admit that they do not understand the environmental impact of some chemicals and pollutants.**

On page 81, the authors state that for some of these chemicals, "environmental fate and transport parameters are uncertain."<sup>425</sup> In plain English, this means that for some pollutants, the authors know neither what the pollutants do in the environment nor how they move around or how far they go. Then how can they say that an incinerator is safe for our environment?

**16. The risk assessment totally ignores one of the groups most at risk, that is, unborn children.**

Yet, experts agree that the unborn child and infants who are breast feeding are the most at risk in exposure to chemicals and pollutants<sup>426</sup> and it has been found that the foetus and breast-fed baby can take in "50 times more pollutants than adults relative to their weight".<sup>427</sup> We should ask ourselves why this group has been left out of the risk assessment.

**17. The conclusions of the risk assessment totally contradict our history of chemical use and our success (or lack there of) at measuring risk.**

We humans have proved time and time again that we are no good at assessing risk and that when we are wrong, we are VERY wrong...excelling far beyond the worse case scenarios that we establish. For more information and references to back up the statement, see section *Some final thoughts*.

**18. The risk assessment requires a value judgment about what is an acceptable risk and what isn't.**

For example, what is an acceptable number of birth defects and who is this number acceptable to?<sup>428</sup> Who is making this judgment call?

Many of the 18 flaws listed above could be used to dispute the findings of the *Generic Human Health and Ecological Risk Assessment Study*<sup>429</sup> on their own. Combined, these 18 flaws in method can only, inescapably, lead us to one conclusion – and that is that this risk assessment is invalid; its findings cannot be relied upon when making a decision about whether an incinerator in our Region (or anywhere, for that matter) is safe. If anything, the shortcomings and omissions in this report prove the exact opposite – that an incinerator is not, and cannot be, safe.



## **LET'S WAIT FOR THE SITE SPECIFIC / TECHNOLOGY SPECIFIC RISK ASSESSMENT BEFORE WE DECIDE WHAT THE RISKS ARE**

Well, it seems that my being 'done' my report is not going to stop the crazy arguments that are being thrown about by the folks who are desperate to push the incinerator upon us in Durham Region.

Yesterday, after I presented this report to Durham Region Council, I came home to discover an issue of the Canadian Statesman on my doorstep. In that issue, front page, was the story by Jennifer Stone, *Doctors raise concerns about incinerator*. This is a piece of that article.

"The Region's Medical Officer of Health said he has gone to great lengths to ensure a recently-released Generic Human Health Risk Assessment was done properly. That document – which Dr. Kyle said he had an expert review to ensure it covered all the bases – concluded risks associated with building an incinerator would be limited. A more site specific risk assessment is also being undertaken, and will look at specifics of the site, technology and other factors, Dr. Kyle said. 'Let's see what it has to say before we decide what the risks are,' he said, noting the Environment Ministry wouldn't allow the project to go ahead without mitigating any associated health risks."<sup>430</sup>

I don't even know where to start! Not only is this a new myth to be debunked but there are myths within this myth! Notice how Dr. Kyle slipped in the *We are Protected by the Ministry of the Environment / the Government* myth? Maybe that's a good place to start. Beyond the debunking I have already done in the Ministry of Environment section of this report, there are some other very recent developments that further support my argument that we are not protected by our elected officials in Toronto.

### **PREMIER MCGUINTY COMES TO THE RESCUE**

As a matter of fact, in yesterday's Toronto Star, Ontario Premier Dalton McGuinty was heralded for striking an expert panel (those experts get around) to study the use of possibly carcinogenic chemicals in baby products and food containers. Dalton McGuinty sounded quite passionate after speaking to parents who were protesting for the safety of their children from these toxins. He even mentioned the fact that 1 out of 4 Ontario citizens are getting cancer and that something must be done! For starters, he is going to introduce a bill in the spring to limit or eliminate some toxic chemicals in industrial emissions and consumer products.<sup>431</sup>

Um, is this not the same Dalton McGuinty whose government, earlier this year, eased the Environmental Assessment process for the approval of incinerators like the one that we are fighting right now in Durham Region?<sup>432</sup> As you can likely attest to now, having made it almost to the end of this report, there is plenty of evidence (from experts even!) that incinerators and the chemical toxins – known and unknown – that are released in their emissions not only cause cancer but also contribute to a multitude of other health concerns (see the section *Incineration is Safe*).

So why is it okay to burn the plastics that contain those chemicals (and we *will* be burning them unless Durham Region starts recycling everything that can be recycled – see the section, *We have to do this now, we have no choice, Michigan is closing and this is a crisis!*) - And why is it okay for babies, infants and children to breathe in those chemicals? Why is the Premier not righteously indignant on *our* behalf?

Am I the only one who sees a bit of a contradiction here?

Not to mention the fact that if the government had been doing its job of protecting us in the first place, those chemicals wouldn't be in baby toys and bottles and food containers. So I think we can pretty well put to rest the myth that those elected folks at the province are going to take care of us. As aptly demonstrated by the parents protesting at Queen's Park yesterday, we are the ones who have to make sure that we're protected.

### **DOWN TO THE NITTY GRITTY**

Okay, down to the nitty gritty. It seems now that a favourite argument of the pro incineration crowd is to say, hey, let's just wait until the report comes. Then we will know for sure whether the incinerator will be safe. Let's examine the validity of this argument:

***First off, we already know that incineration is not safe.*** Read my section, *Incineration is Safe* for references and information to back up this statement. The consultants can do a million risk assessments and it is not going to change this reality. There is no technology that can protect us from the most serious emissions from our incinerator. And even if there were, there is no guarantee it will be purchased by the Region and there is no guarantee that it will be used properly and there is no guarantee that it will always work etc. Please read the section *Research Referenced by Opponents to the Incinerator is out of date with the Technology We Would Use* for more arguments supporting that regardless of what the risk assessment says, we will not be safe.

**Secondly, the site specific and technology specific risk assessment has no more creditability than has the generic one that has already been done.** See the preceding section, *Assessing the Risk Assessment* for information and references to back up this statement. I found it interesting that Dr. Kyle mentioned that an expert reviewed the risk assessment. I wonder why this anonymous expert didn't find any of the flaws that I did. You don't have to be a ballistics expert to know that if someone shoots you point blank, you're probably going to be dead (or at least hurting significantly).

**Last but not least, why are those who oppose the incinerator the only ones who have to wait for the assessment to get an answer about the safety of the incinerator?** Let me point you to a few examples of folks who have apparently already made decisions pre-assessment – I'll let these guys wrap up for me.

- "Providing there are no delays, Mr. Anderson said he is optimistic Durham and York's incinerator will be up and running by 2010."<sup>433</sup>
- "'There is nothing to the suggestion made by Clarington Councillor Adrian Foster that the Municipality is Durham's ultimate waste solution,' said the [Regional] chairman [Anderson]. 'We deem waste from energy as the ultimate waste solution,' he said."<sup>434</sup>
- "How can the Mayor [of Clarington] continue to say that he has not made up his mind on whether Clarington should support this incinerator or not, all the while promoting it to everyone and every group he comes in contact with? All the while showing promotional videos from proponents, but never, not even once truthfully considering the other side of the story?"<sup>435</sup>
- "The mayor wrapped up his comments by showing a nine-minute, incinerator industry-produced video by a Swedish group on Energy-from-Waste, widely considered to be the hottest issue facing Clarington at the moment. Mayor Abernathy received the video while visiting Europe as part of a Regional delegation. 'Sweden, as you know, is regarded as one of the cleanest countries in the world,' said Mayor Abernathy, 'I must say, I was impressed.'<sup>436</sup>

## **ISN'T THIS ENOUGH REASON TO RUN AWAY SCREAMING?**

I could not make this up.

"It is commonly argued that very high furnace temperatures – above 1000 degrees Celcius – will break down dioxins. This is true, but many studies have established that the majority of dioxins released from incinerators are not formed in the furnace, but rather in exhaust gases, as they cool after leaving the furnace. This makes exhaust gas temperatures a key factor in controlling emissions.<sup>437</sup>

Maximum dioxin formation occurs between 300 and 600 degrees, although dioxin formation has been observed both above and below this range. To minimize dioxin production, it is necessary to minimize the time exhaust gases stay in that temperature range (the residency time). Some incinerators are fitted with a quench system to rapidly reduce the temperature of exhaust gases as they leave the combustion chamber. In waste-to-energy incinerators, however, the exhaust is run through heat exchangers before quenching. This enables the incinerator to generate electricity, but at the cost of increased residency time in the critical temperature range, and greater dioxin formation.<sup>438</sup>

At the same time, high furnace temperatures required for dioxin destruction increase the volatilization of mercury, and increase the formation of nitric oxide (NO). Nitric oxide, because it is chemically neutral, is quite difficult and expensive to remove from incinerator exhaust. The standard approach is to inject ammonia or urea, but this method is only about 60 percent effective.

Ammonia injection, in turn, seems to increase emissions of fine particulates, which are most dangerous to human health. Once in the environment, NO is convert to Nitrogen Dioxide (NO<sub>2</sub>), a major cause of photochemical smog. Lower furnace temperatures would reduce the amount of NO<sub>2</sub> produced but would increase dioxin formation."<sup>439</sup>

## SOME FINAL THOUGHTS

“Time and time again it has been found that what we did not know about chemicals proved to be far more important than what we did know. As an incinerator generates hundreds of chemicals, including new compounds, we can expect many unpleasant future surprises.”<sup>440</sup> Here are a few examples from the past:

***Chlorofluorocarbons (CFCs)*** – Touted as the ‘safest chemical ever invented’ when synthesized in 1928, the scientist who discovered it received the highest award in the chemical industry. After 40 years on the market, it was discovered they were producing holes in the ozone layer exceeding scientist’s worst case scenarios.<sup>441</sup>

***Polychlorinated byphenyls (PCBs)*** – Introduced 1929, toxicity testing showed no hazardous effects. They were on the market for 36 years before we started asking questions. By then, they were in the fat of every living body on the planet and evidence emerged that they had endocrine disrupting effects.<sup>442</sup>

***Pesticides*** – Early pesticides had arsenical compounds but those killed pests and the farmers. DDT came along and its creator was awarded the Nobel Prize. But DDT brought death in a different way and it took 20 years to ban it. Other less persistent pesticides are found to have endocrine disrupting effects.<sup>443</sup>

***Tributyl tin (TBT)*** - It took 11 years to discover that TBT, used on boat hulls, was causing irreversible damage to the reproductive system of fish, clams, shrimps and oysters. Damage occurred at 5 parts per trillion. By the end of the 80’s over 100 species of fish were known to be harmed.<sup>444</sup>

## MY MOTION

In this section, I have put together what I call my Kristin Duare McKinnon-Rutherford motion for Regional Council. This is the motion that I would make if I was sitting in Regional Council today. Feel free to use it if you'd like!

Given all of the information that has been provided in this report,

And

Whereas:

- The Stockholm Convention was adopted in 2001 in response to the urgent need for global action to protect human health and the environment from Persistent Organic Pollutants (POPs).<sup>445</sup>
- Canada has signed the United Nations Environmental Program's Stockholm Convention which stipulates that we must apply best environmental practices and use the best available techniques to reduce or avoid existing and new sources of POPs, which include the dioxins and furans that are created through incineration.
- It is well known that incinerators, no matter how well designed, lead to the production of some levels of dioxins and furans as the by-products of combustion of wastes and the Stockholm Convention's annex includes a list of sources that have the "potential for comparatively high formation and release of such unintentional POPs" which includes, "co-incinerators of municipal, hazardous or medical waste or of sewer sludge..."<sup>446</sup>
- The Stockholm Convention also states that POPs wastes must be "disposed of in such a way that the persistent organic pollutant content is destroyed or irreversibly transformed so that they do not exhibit the characteristics of persistent organic pollutants..." The treaty also says that POPs cannot be recycled in any way.<sup>447</sup>
- "All twelve substances identified in the Stockholm Convention are targeted for virtual elimination under Canada's Toxic Substances Management Policy," adopted by the Canadian federal government in 1995.<sup>448</sup>
- The Canadian Environmental Protection Act (CEPA) and the CCME (Canadian Council of Ministers of the Environment) have slated dioxins and furans for virtual elimination due to their "extraordinary environmental persistence and capacity to accumulate in biological tissues."<sup>449</sup>

- Ontario Premier Dalton McGuinty has expressed alarmed concern over the fact that one of every four Ontarians is dying of cancer and that we need to better understand the influence of chemical toxins [in plastics] on our environment and our quality of life.<sup>450</sup>
- Ontario Premier Dalton McGuinty has struck an expert panel to examine potentially carcinogenic chemicals in children's products and food containers, and has announced that his government will introduce a new law in the spring of 2008 that will "reduce and eliminate some toxic chemicals in both industrial emissions and consumer products."<sup>451</sup>
- Durham Region has identified as one of its six strategic objectives (Durham's Community Strategic Plan), "to protect and enhance the environment."<sup>452</sup>
- Durham Region has identified as one of its six strategic objectives (Durham's Community Strategic Plan), "Safe, healthy and caring communities."<sup>453</sup>
- Durham Region has initiated a Regional Climate Change Roundtable with a goal to reduce green house gases and climate impacts.<sup>454</sup>
- Durham Region has indicated that their Long Term Waste Management Strategy Plan will ensure residents will have feasible waste reduction and waste disposal opportunities that are environmentally friendly and financially responsible.<sup>455</sup>
- Durham Region has stated that it would look at the incineration option "after aggressive diversion efforts has been exhausted" and this is definitely not the case to date.<sup>456</sup>
- Durham Region has signed the Toronto and Region 2007 Inter-governmental declaration on clean air as part of its participation in the Smog Summit and has thus recognized that:
  - o Scientists and physicians have linked air pollution to "premature deaths, hospitalizations, increases in chronic heart and lung diseases and acute respiratory disease" and that "even small increases in air pollution elevate the risk of health impacts, particularly among those who are vulnerable and sensitive to air pollution such as young children, the elderly and those with pre-existing diseases."<sup>457</sup>

- "Research data has also indicated that air pollution has a detrimental impact on terrestrial and aquatic ecosystems and buildings." <sup>458</sup>
  - "Air pollution, through health effects, environmental degradation, property damage and reduced visibility, adversely impacts the economy and the quality of life." <sup>459</sup>
  - "The major pollutants [in the air in the GTA] are nitrogen oxide, sulphur dioxide, volatile organic compounds, coarse particulate matter, fine particulate matter and carbon monoxide" <sup>460</sup> and research shows that incineration has resulted in the release of all of these pollutants as well as many unidentified compounds whose potential for harm is yet unknown. <sup>461</sup>
  - "Smog and climate change are two atmospheric problems that share common sources" <sup>462</sup> and incineration creates greenhouse gases.
  - "Actions to reduce greenhouse emissions are often associated with reductions of other atmospheric emissions that contribute to smog and its associated health, economic and ecosystem effects." <sup>463</sup>
- The Town of Ajax has an established the Environmental Advisory Committee whose mandate includes the goal to promote: "the preservation, conservation, protection and enhancement of the natural environment in the Town of Ajax." <sup>464</sup>
  - The City of Oshawa has stated that they are "leading the way in environmental stewardship" green initiatives, including the establishment of an Environmental Advisory Committee and Cabinet as well as the hiring of an Environmental Coordinator. <sup>465</sup>
  - The City of Oshawa has shown tremendous progress in increasing diversion rates, from 37% in 2005 to 58% in 2006. <sup>466</sup>
  - The Town of Whitby achieved the highest diversion rate in Durham Region at 68%. <sup>467</sup>



- The Town of Pickering has established an Office of Sustainability and committed to reduce greenhouse gas emissions (and incineration emits greenhouse gases) by 6% by 2012 in line with Kyoto and endorses an approach to community decision-making that accounts for all resources and all costs, including economic, environmental and social.<sup>468</sup>
- The Town of Whitby's Official Plan outlines as a purpose providing policies that ensure quality of life and secure the health, safety, convenience and welfare of *present and future* [italics mine] inhabitants and that sustain the environment.<sup>469</sup>
- The Municipality of Clarington has established the Living Green Community Advisory whose purpose is, "To develop a community strategy that would include local actions, policies, programs and projects for climate change, energy conservations, clean energy alternatives and promoting more sustainable development practices ...The Green Community Strategy will focus on the community's local response to the interrelations between energy, health, climate change and development."<sup>470</sup>

We, the Councillors of Durham Region hereby move that the plans to build an energy-from-waste incinerator, and all related processes, agreements and costs are brought immediately to an end and not considered again as a waste management solution for Durham Region until the Region has fully maximized and optimized waste prevention initiatives, extended producer responsibility initiatives and a fully comprehensive re-use, reduction and recycling program, the latter of which incorporates all recyclables that are currently collected in all other regions and municipalities in Ontario.

## CONCLUSIONS

Here's what we've learned from this report:

- It is questionable whether Durham Region is experiencing a garbage crisis because there is so much left to do before the Region's waste prevention and diversion strategies are maximized and optimized. In fact, Durham Region is behind many other nearby municipalities and regions in terms of the number and types of materials recycled, as well as in the provision of recycling services or supports to the business, commercial, industrial and institutional sectors.
- Zero Waste strategy is possible *and* practical (just don't take the name too literally), and is being embraced successfully across Ontario, Canada and the world. Many countries, counties and communities have reached diversion rates above 65% and as high as 85%.
- There are many alternatives to incineration. Communities across Ontario, Canada and the world have embraced those alternatives, which include extended producer responsibility, economic development, job creation, partnering with the for-profit and not-for-profit sectors and the maximization of reduction, re-use, recycling and composting initiatives. Nova Scotia, in particular, has embraced all of these concepts and has set a Canadian and international standard of waste-resource management. Countries all over the globe are learning from Nova Scotia's experience, including countries in Europe.
- Incineration does compete with reduction, reuse and recycling programs because an incinerator must be supplied with a guaranteed stream of waste 24/7 – thus competing with diversion for the same resources. In addition, incinerators are so capital intensive and so costly to operate that they often 'eat up' waste management budgets so that there is no money left for prevention and diversion.
- The protest against the incinerator in Durham Region is not a case of NIMBY. Protesters have stated clearly that they are not against an incinerator in Courtice, they are against an incinerator, period – wherever it may be built. Further, the argument that through incineration we deal with our own waste 'in our own backyard' is a false one. We will be sharing both our toxic fly ash and our toxic incinerator emissions with our geographical neighbours.
- We cannot trust the process.
- It appears that Durham Region has already made its decision regarding the Incinerator, despite claims made to the contrary.

- Those citizens who are concerned about the incinerator are not 'jumping the gun.' They do not need to wait for another assessment or yet another expert because we already know that incineration isn't safe. So why is it that some local politicians and bureaucrats are playing Russian roulette with our health and our environment? Really, I want to know. WHY?
- Yes, there are incinerators in Europe and the USA, but everything is not fine. There is an active and persistent opposition to incineration across the world, including in Europe and the US. This opposition has developed because of the many health, environmental and financial crises that have resulted when communities choose waste incineration as the 'solution' to their waste problems. When you look at the history of the incineration industry in Europe and the USA, it becomes clear that the best course of action for Durham Region is to learn from their mistakes and to embrace the alternatives to incineration (and landfill).
- Yes, Sweden does have incinerators but you cannot compare Sweden to Durham Region. Sweden has in place a complex legal, regulatory and philosophical framework for the management of waste. Sweden has also embraced extended producer responsibility, comprehensive diversion targets and initiatives regarding the reduction of hazardous wastes and the use of chemicals that hinder recycling. Ontario has none of these.
- Incineration is not safe. There is no pollution control technology that can filter out the most dangers of particulates that are created by burning residual wastes. In addition to these nanoparticles, burning garbage releases 100's of known chemical and pollutants and hundreds more that are not known and thus, cannot be measured or controlled. While dioxins and furans are two of the most feared types of toxins that can be released through incineration, they are by far not the only danger. And we know even less about what happens when these dangerous substances combine. Many serious health risks are linked to incineration emissions, and the unborn child and nursing infant are at 50 times more risk to the effects of incinerator emissions. (And then there's the toxic ash: The better the pollution controls, the more toxic the ash that is created from combustion.)
- The argument that state-of-the-art incinerator technology will keep residents of Durham Region safe doesn't stand up. There are very real limitations to emissions monitoring, the least of which is that it is impossible to monitor something you can't identify. It is estimated that the effects of 88 to 90% of the chemicals, particles and pollutants coming from incineration are unknown. The history of incineration is also ripe with examples of incinerators breaking emissions limits and regulations by astronomical factors on a fairly regular basis.
- We will not be protected by the Ministry of the Environment because the Ministry does not have anywhere near sufficient regulations or legislation in place to protect us from incinerator emissions. Ontario guidelines are woefully inadequate in comparison to other jurisdictions and the history of incinerators is ripe with

stories of facilities breaching regulatory limits. And the very fact that the Province of Ontario recently eased the Environmental Assessment process for incinerators illustrates there is little understanding at the provincial level of the threats that incineration pose to our health and to the environment.

- Landfills are not any worse than incineration. Some would argue that they are less of a threat to health and the environment than incineration because at least the toxic effects of landfill are kept local. Landfill done well is just as viable a disposal option as incineration. However, history has shown that before the 'incineration booms' in the US and in Europe, a demonizing of landfill – as well as the fear of running out of landfill space – has been a prerequisite to selling the incinerator solution.
- By defining the choice as one between landfill and incineration we obscure the fact that the most successful waste management option – in terms of economic development, job creation, capital cost, operating cost, energy savings, community development and health, social and environmental impact – is diversion.
- The arguments that incineration puts less dioxin in the air than fireworks, barbecues and other such examples are deeply flawed. While this may or may not be the case, there are far more pollutants and chemicals, both known and unknown, that are entering our atmosphere from incineration than just dioxin.
- The argument that most of what you see coming out of the stacks is steam does not stand up to close scrutiny. While this may or may not be true in a literal sense, it is what you can't see coming out of the stack – those incredible infinitesimally small nanoparticles – that cause the greatest threat.
- Incineration is a very inefficient and expensive source of limited energy. There is no guarantee how much energy will be created from waste incineration and energy resulting from incineration releases more greenhouse gases than coal fired or natural gas fired plants. Incinerators also release five times the rate of mercury than electricity generated by coal.
- Incinerators are financial disasters. They are capital intensive and extremely costly to run. Many communities around the world – particularly in the US – have been financially devastated by investing in incineration. The put-or-pay contracts often leave host communities paying substantially higher fees for burning garbage than outside communities. And when there isn't enough garbage to feed the incinerators, it is taxpayers who have to pick up the slack.
- The health assessment completed for Durham Region is deeply flawed. The results of the assessment cannot be accepted as valid because of researcher assumptions and bias, and significant flaws in methodology.

This is time for Durham Region to make a choice. Do you want to go down the same road as Europe and the US and make the same (very costly) mistakes that they did? Or do you want to embrace the successes of so many communities who have found the answer in extended producer responsibility, economic development, job creation, partnering with the for-profit and not-for-profit sectors and maximizing reduction, re-use, recycling and composting initiatives? This is an opportunity ... an opportunity to put your faith in people, to embrace a vision of possibility and to lead Durham Region – and perhaps even Ontario - into a future that is healthy and safe for us all. This isn't a waste management decision, an administrative decision or even a financial decision. This is a moral one. Do you want to do the right thing or just what seems the easiest?

Please, say no to incineration and yes to our enthusiasm, our energy, our perseverance, our potential and our future.

Thanks for listening. I'm glad you've made it to the end. I'm glad *I* made it to the end!

Kristin Duare McKinnon-Rutherford  
Courtice, Ontario

## **APPENDICES**

## Appendix 1 – Incinerator Bans and Moratoria

Source: Global Alliance for Incinerator Alternatives / Global Anti-Incinerator Alliance (GAIA) (2003). Waste Incineration: A Dying Technology, pages 86 and 87.

### Incinerator Bans and Moratoria

#### INTERNATIONAL:

1996: the Protocol to the London Convention banned incineration at sea globally.

1996: the Bamako Convention banned incineration at sea, on territorial or internal waters in Africa.

1992: the OSPAR Convention banned incineration at sea in the north-east Atlantic.

#### ARGENTINA:

2003: the city Council of Granadero Baigorria, Santa Fe province, outlawed medical waste incineration.

2002: the Buenos Aires City Council passed a law that bans incineration of medical waste. This includes medical waste generated in the city and sent outside for treatment.

2002: the City Council of Villa Constitución, Santa Fé province, banned the construction of incinerators.

2002: the City Council of Coronel Bogado, Santa Fé province, banned the construction of incinerators.

2002: the City Council of Marcos Juárez, Córdoba province, outlawed the construction of incinerators.

2002: the Municipal Council of Casilda, Santa Fe province, banned hazardous waste incineration for 180 days. The resolution was extended for another 180 days in November 2002.

2002: the City Council of Capitán Bermúdez outlawed all type of waste incineration.

2001: the province of San Juan banned crematoria in urban and semi-urban areas.

#### BRAZIL:

1995: the Municipality of Diadema, State of Sao Paulo, approved a law banning incinerators for municipal waste. The city council states that the waste problem should be tackled using reduce, reuse, and recycling policies.

#### CANADA:

2001: the Province of Ontario enacted a hazardous waste plan that includes the phaseout of all hospital medical waste incinerators.

#### CHILE:

1976: Resolución 07077 banned incineration in several metropolitan areas of the country.

#### CZECH REPUBLIC:

1997: Cepi, district Pardubice banned construction of new waste incinerators.

#### GERMANY:

1995: the largest, most populated and most industrialized state in Germany — North Rhine/Westfalia — bans municipal solid waste incinerators.

#### GREECE:

1994: the national government approved legislation declaring it illegal to burn hazardous waste in waste-to-energy plants. In 2001, the Minister for the Environment formally declared a policy of prohibiting municipal waste incineration.

#### INDIA:

1998: the central government banned incineration of chlorinated plastics nationally. The city of Hyderabad in the state of Andhra Pradesh banned on-site hospital waste incineration.

#### IRELAND:

1999: although no formal ban is in place, Ireland closed all of its medical waste incinerators.

#### JAPAN:

1998: the Ministry of Health and Welfare revised the laws to allow disposal of PCBs using chemical methods. Although there is no formal ban on incineration of PCBs, there is an informal proscription on PCB incineration.

#### MALTA:

2001: all public and private hospitals were to eliminate clinical waste incineration by 2001.

#### PHILIPPINES:

1999: the Clean Air Act was passed which bans all types of waste incineration. The law extends to municipal, medical and hazardous industrial wastes.

#### SLOVAKIA:

2001: banned waste importation for incineration.

#### SPAIN:

1995: the regional government of Aragón established autoclaving as the required form of treatment for medical waste, effectively eliminating medical waste incineration.

#### UNITED STATES: STATES

Delaware, 2000: state prohibited new solid waste incinerators within three miles of a residential property, church, school, park, or hospital.

Iowa, 1993: state enacted a moratorium on commercial medical waste incinerators. Moratorium still in place. Moratorium does not extend to incinerators operated by a hospital or consortium of hospitals.

Louisiana, 2000: state revised its statute Title 33, which prohibits municipalities of more than 500,000 from owning, operating or contracting garbage incinerators in areas zoned for residential or commercial use.

Maryland, 1997: state prohibited construction of municipal waste incinerators within one mile of an elementary or secondary school.

**Massachusetts, 1991:** state enacted a moratorium on new construction or expansion of solid waste incinerators. Moratorium still in place.

**Rhode Island, 1992:** state banned the construction of new municipal solid waste incinerators. First U.S. state to enact such a ban.

**West Virginia, 1994:** state banned the construction of new municipal and commercial waste incinerators. Permits pilot tire incineration projects.

#### COUNTIES

**Alameda County, California, 1990:** voter initiative "Waste Reduction and Recycling Act" passed, banning waste incinerators in the county. A later court ruling limits the ban to the unincorporated areas of the county, however, there are no operating municipal waste incinerators in Alameda county.

**Anne Arundel County, Maryland, 2001:** county banned solid waste and medical waste incinerators.

#### CITIES

**Brisbane, California, 1988:** city banned new construction of waste incinerators.

**Chicago, Illinois, 2000:** city banned municipal waste incineration. The ban extends to burning waste in schools and apartment buildings.

**San Diego, California, 1987:** ordinance stipulates that waste incinerators cannot be sited within a certain radius of schools and daycare centers, which results in no eligible land being available for incinerators.

**Ellensburg, New York, 1990:** town banned waste incinerators.

**New York City, 1989:** Banned all apartment house incinerators by 1993. By 1993, all 2,200 apartment house incinerators that were in operation in 1989 were shut down.

#### MORATORIA:

Several states in the United States, including Arkansas, Wisconsin and Mississippi, have enacted moratoria on medical or municipal waste incinerators that have since expired or been lifted. The US EPA enacted a nationwide, 18-month freeze on new construction of hazardous waste incinerators in 1993. Two unsuccessful bills were introduced in the US Congress during the 1990s to enact a moratorium on new waste incinerators.

Other examples of incinerator moratoria worldwide include:

**1982:** Berkeley, California passes a ballot initiative banning garbage burning plants for five years. The moratorium allowed the city to develop recycling programs which became national models.

**1985:** Sweden implemented a 2-year moratorium on new incinerators.

**1990:** In the Flemish-speaking part of Belgium, public pressure resulted in a 5-year moratorium on new municipal waste incinerators.

**1992:** Ontario, Canada banned new municipal incinerators. In 1996 a new conservative government overturned the ban.

**1992:** Baltimore, Maryland passed 5-year moratorium on new municipal incinerators.



## Appendix 2 – Global Protest against Incinerators

Source: Global Alliance for Incinerator Alternatives / Global Anti-Incinerator Alliance (GAIA) (2003). Waste Incineration: A Dying Technology, page 69.



## Appendix 3 – Air Emission from Incineration

Source: Global Alliance for Incinerator Alternatives / Global Anti-Incinerator Alliance (GAIA) (2003). Waste Incineration: A Dying Technology, pages 84 and 85.

### APPENDIX A:

#### Air Emissions from Incineration

	2-heptanone	2-bromo-4-chlorophenol
	2-butoxyethanol	1,2,5-trichlorobenzene
	nonane	dodecane
	isopropyl benzene	bromochlorophenol
	propylcyclohexane	2,4-dichloro-6-methylphenol
	dimethyloctane	dichloromethylphenol
	pentanecarboxylic acid	hydroxybenzotrile
	propyl benzene	tetrachlorobenzene
	benz aldehyde	methylbenzoic acid
	5-methyl-2-furane carboxaldehyde	trichlorophenol
From Municipal Waste Incinerators <sup>221</sup>	1-ethyl-2-methylbenzene	2-(hydroxymethyl) benzoic acid
	1,3,5-trimethylbenzene	2-ethylnaphthalene-1,2,3,4-tetrahydro
	trimethylbenzene	2,4,6-trichlorophenol
pentane	benzotrile	4-ethylacetophenone
trichlorofluoromethane	methylpropylcyclohexane	2,3,5-trichlorophenol
acetonitrile	2-chlorophenol	4-chlorobenzoic acid
acetone	1,2,4-trimethylbenzene	2,3,4-trichlorophenol
iodomethane	phenol	1,2,3,5-tetrachlorobenzene
dichloromethane	1,3-dichlorobenzene	1,1'biphenyl (2-ethenyl-naphthalene)
2-methyl-2-propanol	1,4-dichlorobenzene	3,4,5-trichlorophenol
2-methylpentane	decane	chlorobenzoic acid
chloroform	hexanecarboxylic acid	2-hydroxy-3,5-dichlorobenzaldehyde
ethyl acetate	1-ethyl-4-methylbenzene	2-methylbiphenyl
2,2-dimethyl-3-pentanol	2-methylisopropylbenzene	2-nitrostyrene(2-nitroethenylbenzene)
cyclohexane	benzyl alcohol	decanecarboxylic acid
benzene	trimethylbenzene	hydroxymethoxybenzaldehyde
2-methylhexane	1-methyl-3-propylbenzene	hydroxychloroacetophenone
3-methylhexane	2-ethyl-1,4-dimethylbenzene	ethylbenzoic acid
1,3-dimethylcyclopentane	2-methylbenzaldehyde	2,6-dichloro-4-nitrophenol
1,2-dimethylcyclopentane	1-methyl-2-propylbenzene	sulphonic acid
trichloroethene	methyl decane	m.w. 192
heptane	4-methylbenzaldehyde	4-bromo-2,5-dichlorophenol
methylcyclohexane	1-ethyl-3,5-dimethylbenzene	2-ethylbiphenyl
ethylcyclopentane	1-methyl-(1-pro-penyl)benzene	bromodichlorophenol
2-hexanone	bromochlorobenzene	1(3H)-isobenzofuranone-5-methyl
toluene	4-methylphenol	dimethylphthalate
1,2-dimethylcyclohexane	benzoic acid methyl ester	2,6-di-tertiary-butyl-p-benzoquinone
2-methylpropyl acetate	2-chloro-6-methylphenol	3,4,6-trichloro-1-methyl-phenol
3-methyleneheptane	ethyl dimethylbenzene	2-tertiary-butyl-4-methoxyphenol
paraldehyde	undecane	2,2'-dimethylbiphenyl
octane	heptanecarboxylic acid	2,3'-dimethylbiphenyl
tetrachloroethylene	1-(chloromethyl)-4-methylbenzene	pentachlorobenzene
butanoic acid ethyl ester	1,3-diethylbenzene	bibenzyl
butyl acetate	1,2,3-trichlorobenzene	2,4'-dimethylbiphenyl
ethylcyclohexane	4-methylbenzyl	1-methyl-2-phenylmethylbenzene
2-methyloctane	alcohol	benzoic acid phenyl ester
dimethyldioxane	ethylhex anoic acid	2,3,4,6-tetrachlorophenol
2-furanecarboxaldehyde	ethyl benzaldehyde	tetrachlorobenzofurane
chlorobenzene	2,4-dichlorophenol	fluorene
methyl hexanol	1,2,4-trichlorobenzene	phthalic ester
trimethylcyclohexane	naphthalene	dodecanecarboxylic acid
ethyl	cyclopentasiloxanede camethyl	3,3'-dimethylbiphenyl
benzene	methyl acetophenone	3,4'-dimethylbiphenyl
formic acid	ethanol-1-(2-butoxyethoxy)	hexadecane
xylene	4-chlorophenol	benzophenone
acetic acid	benzothiazole	tridecanoic acid
aliphatic carbonyl	benzoic acid	hexachlorobenzene
ethylmethylcyclohexane	octanoic acid	heptadecane

fluorenone  
 dibenzothiophene  
 pentachlorophenol  
 sulphonic acid m.w. 224  
 phenanthrene  
 tetradecanecarboxylic acid  
 octadecane  
 phthelic ester  
 tetradecanoic acid isopropyl ester  
 caffeine  
 12-methyltetradecanecarboxylic acid  
 pentadecanecarboxylic acid  
 methylphenanthrene  
 nonadecane  
 9-hexadecene carboxylic acid  
 anthraquinone  
 dibutylphthalate  
 hexadecanoic acid  
 eicosane  
 methylhexadecanoic acid  
 fluoroanthene  
 pentachlorobiphenyl  
 heptadecanecarboxylic acid  
 octadecadienal  
 pentachlorobiphenyl  
 aliphatic amide  
 octadecanecarboxylic acid  
 hexadecane amide  
 docosane  
 hexachlorobiphenyl  
 benzylbutylphthalate  
 aliphatic amide  
 diisooctylphthalate  
 hexadecanoic acid hexadecyl ester  
 cholesterol

**From Hazardous Waste Incinerators<sup>222</sup>**

acetone  
 acetonitrile  
 acetophenone  
 benzaldehyde  
 benzene  
 benzenedicarboxaldehyde  
 benzofuran  
 benzoic acid  
 bis(2-ethylhexyl)phthalate  
 1-bromodecane  
 bromofluorobenzene  
 bromoform  
 bromomethane  
 butylbenzylphthalate  
 C8H18  
 carbon tetrachloride  
 chlorobenzene  
 1-chlorobutane

chlorocyclohexanol  
 1-chlorodecane  
 chlorodibromomethane  
 2-chloroethyl vinyl ether  
 chloroform  
 1-chlorohexane  
 chloromethane  
 1-chlorononane  
 1-chloropentane  
 cyclohexane  
 cyclohexanol  
 cyclohexene  
 1-decene  
 dibutylphthalate  
 dichloroacetylene  
 dichlorobromomethane  
 1,2-dichlorobenzene  
 1,4-dichlorobenzene  
 1,1-dichloroethane  
 1,2-dichloroethane  
 1,1-dichloroethylene  
 dichlorodifluoromethane  
 dichloromethane  
 2,4-dichlorophenol  
 diethylphthalate  
 dimethyl ether  
 3,7-dimethyloctanol  
 dioctyl adipate  
 ethenylethylbenzene  
 ethylbenzaldehyde  
 ethylbenzene  
 ethylbenzoic acid  
 ethylphenol  
 (ethylphenyl) ethanone  
 ethynylbenzene  
 formaldehyde  
 heptane  
 hexachlorobenzene  
 hexachlorobutadiene  
 hexanal  
 1-hexene  
 methane  
 methylcyclohexane  
 methyl ethyl ketone  
 2-methyl hexane  
 3-methyleneheptane  
 3-methylhexane  
 5,7-methylundecane  
 naphthalene  
 nonane  
 nonanol  
 4-octene  
 pentachlorophenol  
 phenol  
 polychlorinated biphenyls (PCBs)  
 polychlorinated dibenzo-p-dioxins (dioxins)  
 polychlorinated dibenzofurans (furans)

pentanal  
 phenol  
 phenylacetylene  
 phenylbutenone  
 1,1'-(1,4-phenylene)bisethanone  
 bisethanone  
 phenylpropenol  
 propenylmethylbenzene  
 1,1,2,2-tetrachloroethane  
 tetrachloroethylene  
 tetradecane  
 tetramethyloxirane  
 toluene  
 1,2,4-trichlorobenzene  
 1,1,1-trichloroethane  
 1,1,2-trichloroethane  
 trichloroethylene  
 trichlorofluoromethane  
 trichlorotrifluoroethane  
 2,3,6-trimethyldecane  
 trimethylhexane  
 2,3,5-trichlorophenol  
 vinyl chloride



## Appendix 4 – Air Emissions considered in the Risk Assessment

Source: Whitford, Jacques (2007). Generic Human Health and Ecological Risk Assessment Study. Prepared for Durham-York Residual Waste Study.

REPORT

Chemicals of Potential Concern Evaluated in the Risk Assessment

Metals	Chlorinated Monocyclic Aromatics	Chlorinated Polycyclic Aromatics	Polycyclic Aromatic Hydrocarbons	Volatile Organic Compounds
Antimony Arsenic✓ Barium Beryllium Boron Cadmium✓+ Chromium ✓ Cobalt Lead✓+ Mercury✓+ Nickel Phosphorus Silver Vanadium Zinc	1,2-Dichlorobenzene 1,2,4-Trichlorobenzene 1,2,4,5-Tetrachlorobenzene Pentachlorobenzene Hexachlorobenzene 2,4-Dichlorophenol 2,4,6-Trichlorophenol 2,3,4,6-Tetrachlorophenol Pentachlorophenol	PCBs 2,3,7,8-TCDD - (dioxin/furan)TEQ✓+  <b>Combustion Gases</b>  PM <sub>10</sub> <sup>+</sup> PM <sub>2.5</sub> <sup>+</sup> CO HCl <sup>+</sup> HF NO <sub>x</sub> <sup>+</sup> SO <sub>x</sub> <sup>+</sup>	<u>Benzo(a)pyrene group</u> Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(g,h,i)perylene Benzo(k)fluoranthene Chrysene Dibenz(a,h)anthracene Indeno(1,2,3-cd)pyrene  Anthracene Naphthalene Phenanthrene	Benzene✓ Chloroform Dichloromethane Formaldehyde Tetrachloroethylene Vinyl chloride✓

Notes: Chemical list derived from Cantox Report for Human Health Risk Assessment for the Proposed Expansion of the KMS Peel, Inc. Brampton, Energy-From-Waste Facility (2000)

✓ Chemicals also reviewed by MOE in Environmental Risks of Municipal Non-Hazardous Waste Landfilling and Incineration (1999)

+ Chemical also included in GUIDELINE A-7 Combustion and Air Pollution Requirements for New Municipal Waste Incinerators (MOE 2004)

## Appendix 5 – What to do with the leftover trash?

Here is the rest of the list of trash items (the non-recyclables) according to Durham Region.<sup>471</sup> Beside each item I have listed alternatives to disposal in landfill or by incineration. Unless otherwise indicated, I am drawing on my own personal experience and on information I have gathered over the years.

Item	Alternatives
<b>Baby wipes</b>	Use rags or cloths (re-washable, non-toxic and recyclable)
<b>Baby diapers</b>	Cloth diapering or cloth diaper service Besides being more 'green', cloth diapers are significantly cheaper than disposables. The costs (in 1989) to diaper a baby for 2 ½ years: Cloth diapers laundered at home - \$870; cloth diapers through a diaper service - \$1,200; disposable diapers - \$2,300. <sup>472</sup>
<b>Balloons</b>	Biodegradable balloons – made of natural latex – are now available <a href="http://www.hullcc.gov.uk">www.hullcc.gov.uk</a>
<b>Broken dishes</b>	Broken dishes can be used in the bottom of plant pots for drainage. They can also be used in arts and crafts projects.
<b>Bubble packaging</b>	Bubble packaging can be used over and over again for sending fragile items in the mail, etc.
<b>Candles</b>	Candles or candle ends can be melted together to create new candles
<b>Carbon paper</b>	Do they still make carbon paper? With all of the technology out there today – including multi-copy, carbon-paper-free forms, this is an outdated type of waste.
<b>Fire place / BBQ ashes</b>	Ashes can be used for a number of purposes, including as a grease cutter (mixed with water to scrub greasy camping or barbecuing pans), on icy walkways to avoid slippery falls, as a pest repellent around plants to deter slugs, to polish pewter (mixed with water to form a paste) and to fertilize lawns. <a href="http://www.tipking.co.uk/Use_stuff/Recycling/Ashes/">www.tipking.co.uk/Use_stuff/Recycling/Ashes/</a>
<b>Cereal box liners</b>	It is time for industry to come up with better packaging that is recyclable and that does not have to go to landfill (or incineration).
<b>Chip bags</b>	It is time for industry to come up with better packaging that is recyclable and that does not have to go to landfill (or incineration).
<b>Cigarette butts</b>	While cigarette butts are not recyclable at this time, there is ongoing research into how to break down their components so that they are not harmful.
<b>Clothing</b>	Textiles, including clothing, can be recycled. Old clothing can also be sold at yard sales, used as rags, or donated to charity.
<b>Cookie bags</b>	It is time for industry to come up with better packaging that is recyclable and that does not have to go to landfill (or incineration).

<b>Item</b>	<b>Alternatives</b>
<b>Cutlery trays</b>	Old cutlery trays can be donated to second hand stores or used for arranging and storing tools or other hardware supplies.
<b>Dishes &amp; pots/pans</b>	Old dishes, pots and pans can be donated to second hand stores. They can also be used for arts and crafts project, for example, painting plates or making planters or bird feeders out of dishes.
<b>Dryer sheets</b>	Adding a damp hand towel or wash cloth to laundry when it is near-dry can control static cling as well as dryer sheets.
<b>Fast food establishment cups</b>	Fast food establishments can be encouraged to use recyclable or compostable cups. These options are available.
<b>Fluorescent tubes</b>	A machine called the Bulbeater is designed to shred fluorescent bulbs, extract the toxic chemicals and produce clean glass for recycling. <a href="http://www.facilities.utoronto.ca/BLDGGROU/WASTEMAN/4renviro/bulbeatr.htm">www.facilities.utoronto.ca/BLDGGROU/WASTEMAN/4renviro/bulbeatr.htm</a>
<b>Kitty litter</b>	Most cat litter is biodegradable so surely we can come up with an alternative to trashing it!
<b>Metal and plastic hangers</b>	Hangers can be donated to dry cleaner stores and second hand stores. Retailers and clothing manufacturers can also be encouraged to use recycled hangers and / or to reuse hangers rather than continually flooding more and more into the marketplace.
<b>Take out coffee cups</b>	Coffee establishments can sell reusable travel mugs and encourage customers to use these rather than disposable cups. Coffee establishments can also be encouraged or required to use recyclable alternatives.
<b>Toothpaste tubes</b>	Toothpaste is now available in recyclable containers as an alternative to tubes. It remains to be seen whether these new containers catch on since tubes still dominate the market.
<b>Wallpaper</b>	Wallpaper samples, scraps and discards can be used in arts and crafts projects. A patent was issued in 1994 for wallpaper that, after used, is recyclable. It is unclear whether this product has been promoted and sold. <a href="http://www.patentstorm.us/patents/5302404-description.html">www.patentstorm.us/patents/5302404-description.html</a>

## Appendix 6 – What We Do Around the House

Here is a 'real life' list of some of the things that we do in our own household to control waste and to lighten our 'footprint' on the planet. If I could come up with this list on my own, imagine what an amazing resource we'd have if other people contributed as well!

What we do at home	Why we do it
Collect the plastic bags in which our newspapers (local and The Star) are delivered and return those to the Star delivery person	To cut down on plastic waste in landfills. The bags can be re-used over and over again, which is good for the delivery person too, as he has to pay out of pocket for the bags.
My friend also collects her newspaper bags and gives them to me to pass on to the STAR delivery person	Same as above
Use rain barrels (2) from spring through fall	Saves on municipal water use, which also saves us money. The water is also better for the gardens.
Purchase cleaners (toilet cleaner, general cleaner, laundry detergent, window cleaner, safe bleach) at S & H Health Food Store	These cleaners are all natural cleaners without chemicals and perfumes that harm the environment. Their prices are reasonable and by purchasing them at this health food store we support local / Ontario business.
Use biodegradable bags for all garbage, not just compost	Although it is certainly more expensive to do so, we use biodegradable bags for all of our garbage – this way when our garbage is delivered to landfill, we are not adding more plastic bags to the mix.
Used biodegradable bags for our community clean-up.	When friends and I cleaned up the northwest corner of Courtice Road as part of Earth Week, we used only biodegradable bags for the same reasons as listed above. Yes, they are a bit smaller and yes, they break more easily (so you can't stuff as much in them) but they do work.
Use the new LED Christmas lights	We have phased out our traditional Christmas lights (indoor and out) and are now using LEDs. We took advantage of coupons from OPG and Canadian Tire. We feel better using less energy and we are looking forward to a smaller power bill in January.
Use new light bulbs in the house	We have replaced almost all of the light bulbs in our house with the incandescent ones that last longer and use little energy. We save energy and money.
Use power bars on 'standby' equipment	We have started to use power bars on equipment that has a standby feature or a LED clock (and therefore uses energy all of the time). Turning these devices off by power bar saves energy. Some smaller appliances, like our electric kettle and coffee pot, we just unplug when we aren't using them.
Use containers rather than plastic wrap	We are substituting plastic wrap with re-useable containers as much as possible in the kitchen in order to cut down on plastic waste.

<b>What we do at home</b>	<b>Why we do it</b>
Use rechargeable batteries	We use rechargeable batteries as often as possible around the house in order to cut down on waste (i.e., old batteries).
Save used batteries and take to depot	So that the batteries don't end up in the garbage, i.e., landfill.
Reduce use of water bottles	Because we can have a glass of water out of the tap and it doesn't create any waste.
Use fabric shopping bags	Because the shopping bags are recyclable (Loblaws) so we are supporting a good initiative – and we are cutting down on plastics in land fill.
Wrap gifts in fabric shopping bags	Because in many (but not all) municipalities, gift wrap is not recyclable. By using cloth bags, we avoid creating waste while also presenting others with a better option to plastic bags.
Donate plastic bags to charities	No matter what we do, we end up with some plastic bags. I save these up and donate them to charities like second hand stores and Community Care (for giving out frozen foods).
Use only cool dry on the dishwasher	We save energy by not using heat dry on the dishwasher. Opening the door and letting the dishes air dry works just as well and it's cheaper.
Decided not to replace our microwave oven	When our microwave oven 'died' in less than three years, we decided not to replace it because a) microwaves seem to be 'disposable' product and we don't want to encourage this and b) we decided we could do without it. Not only that, but we'll save energy not using the microwave.
Use the trading post to buy and sell used items	My husband's workplace has an online trading post which is great for getting rid of second hand items easily and quickly. No yard sale required.
Deliver Durham non-recyclables to the City of Kawartha Lakes	Because many items recyclable where I used to live (CKL) are not recyclable in Durham, so I deliver them to friends back 'home' to put out for collection – including textiles, a number of recyclable plastics (including Styrofoam) and aluminium foil and containers.
Donate old eyeglasses to the Lions Club	So that the eyeglasses can be used by someone less fortunate and I am not adding to landfill.
Buy my soap and food products at the Bulk Food store	To cut down on packaging; I bring my own re-used bags or containers when I can remember to do so!
Make homemade cards out of old photos and greeting cards	I enjoy making the cards, they are appreciated by recipients and I cut down on old photos and greeting cards that would otherwise go in the garbage.
Make my own gifts	I enjoy making my own gifts and I don't end up with any packaging that recipients have to throw away. I do pack my gifts in boxes and other containers that otherwise would go into the garbage or recycling.
Installed a programmable thermostat	To cut down on energy use and save money.
Hang out laundry to dry	To cut down on energy use and save money.



<b>What we do at home</b>	<b>Why we do it</b>
Moved closer to work	Now instead of a 30-minute drive, my husband has a 5-minute drive. We pollute less, save money and save wear and tear on our vehicle.
Got rid of the second car	We now have access to public transportation and can also walk or ride a bike to where we need to go.
When we were getting rid of an old desk we put it out on the front lawn with a sign that said, "Free to a good home"	Although the desk was old and we replaced it with one that is better for computer use, we felt someone could maybe make use of it. So rather than throwing it out, we gave it away. It was gone in less than 12 hours
Re-use plastic bags e.g., those from bread, etc. (washed of course) for produce bags at the supermarket	So we don't have to bring home MORE bags from the store when we buy produce ... especially since those produce bags are especially wimpy and no good for anything else.
Given those big paper yard waste bags to family members in other municipalities and provinces	In Thunder Bay, yard waste is collected as garbage. My mother-in-law expressed interest in yard waste bags when she was visiting because by using them, she'd at least be contributing less plastic to land fill. The same is the case for my sister and family in Saskatchewan. In Dauphin, Manitoba, residents are to rake their leaves into a pile and leave them in the back lane for collection. Works crews have to 'pitchfork' the leaves into the truck (for compost) which, as you can imagine, isn't easy. The yard waste bags are perfect (I guess they haven't heard of them) as using them allows the leaves to be picked up easily while not contributing any plastic to landfill.
Return plant trays back to the nursery	I always return plant trays back to the nursery after I am finished using them. Doing so means less garbage for me and a cost savings for the nursery.
Return prescription bottles to the pharmacy	Although they don't make it known (I'm not sure why), my pharmacy does reuse prescription bottles and will take them back. I cut down on garbage and they save money.
Drop off unused drugs (prescription or non-prescription) at the pharmacy	You can take drugs you don't need to most drug store pharmacies and they will ensure that the drugs are disposed of properly (not in land fill).
Take advantage of repair services	I have had a purse of mine repaired twice, rather than just throwing it away and buying a new one. I also invested in a more expensive laser printer that can actually be repaired rather than having to be disposed of when it breaks down. I save money and I give business to local entrepreneurs – while also not creating garbage.
No pesticides allowed!	We have a 'family policy' not to use any pesticides or related 'bad' products on the lawn or gardens. They are good neither for my health nor that of the environment.
Use recycled office paper	I try to purchase recycled office paper whenever possible – recently I bought a case of 30% post consumer product paper though I hope that next time I can find something with a higher percentage. I pay more but I feel better about it.

<b>What we do at home</b>	<b>Why we do it</b>
Take used wine bottles to Jobs'R'Us	We take used wine bottles (a neighbour brings his over too) to Jobs'R'Us, a business in Lindsay that employs people with developmental disabilities. We prefer to support the organization while also making 'resources' out of our waste.
Looking for local mugs	We are on a mission to buy mugs that aren't made in China after all of the toy recalls and lead scares. (You won't believe how hard it is to find mugs not made in China.) One day, after much searching, we had the brainstorm to buy from a local potter. We have plans to go to a pottery show that is being held the last weekend of November. We live healthier and support local artisans.
Made our own napkins	As one of his Christmas gifts (because he is so hard to buy for) I made my husband a set of cloth napkins rather than using paper napkins that have to be thrown out.
Made our own curtains	I made new curtains for the deck door because I couldn't find anything that I liked. I also wanted a thick material to help keep the heat out in the summer and the warmth in during the winter. We supported a local fabric store and were able to get just what we wanted.
Pass along information when we can	We pass along new information when we can. After we heard that it is more environmentally friendly to wash your car at a carwash rather than at home (because of where the soapy water drains) we passed the information on to other folks via email.
We have come up with creative ways to use up useless old floppies and CDs	I make decoupage coasters out of them – they work really well!!
We rarely buy books but on the odd occasion that we do – or we are given one – we always donate them to the library when we are done.	Cutting down on waste and we are contributing to the community. (I was able to do this in the City of Kawartha Lakes but was told that Clarington doesn't accept book donations.)
Use flash / fast drives	We use flash drives for moving information from one computer to the other, to backup files and to transport files. Using the flash drive instead of floppies or CDs cuts down on waste and saves time.
Donate old Christmas decorations to charity	Charities running second hand stores can sell the decorations or use them in their own facilities while we save on garbage that would go to the dump.

**Appendix 7 – Complaint to the Environmental Commissioner of Ontario –  
Cover Letter**

Gord Miller  
Environmental Commissioner of Ontario  
1075 Bay Street, Suite 605  
Toronto, ON M5S 2B1  
[inquiry@eco.on.ca](mailto:inquiry@eco.on.ca)

March 17, 2008

Dear Mr. Miller,

**Re: Complaint against the Regional Municipality of Durham & the Government of Ontario**

I am writing to you today to register an official complaint against the Regional Municipality of Durham and the Government of Ontario. I am gravely concerned that Durham Region is forcing the 'incinerator solution' on its citizens and member municipalities despite significant opposition, valid public concern and the threat of environmental degradation to an already highly comprised air shed. The Government of Ontario is indirectly supporting these circumstances through its own promotion of the incineration industry.

I became involved in the local incineration issue about six months ago. I have done hundreds of hours of research in that time and have been actively involved in opposing the incinerator and fighting for safer waste management alternatives – alternatives that do not put the health of our environment and our children at risk. Through this learning process, I have been most struck - and disheartened - by the bureaucratic manipulation of both process and information. The goal of this manipulation - which relies a great deal on half truths and lies by omission - seems to be to ensure that an incinerator is built in Durham Region regardless of mounting evidence that it is the worst possible solution to our waste problem.

I am by far not the only person opposed to incineration in Durham Region and beyond. Citizens have been bombarding Regional (and Clarington<sup>1</sup>) Council and Committees of Council with delegations, letters and email messages, expressing concerns about incineration and requesting more healthy and environmentally friendly waste management alternatives. Dozens of letters to the editor on this issue over the past three years reflect these concerns as well.

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<sup>1</sup> Clarington is one of the eight municipalities in Durham Region and has been 'chosen' as the host community for the incinerator. Local council has declared itself an unwilling host. (The other seven municipalities of Durham Region are Ajax, Brock, Oshawa, Pickering, Scugog, Uxbridge and Whitby.)

Public concern has been mirrored by local municipal decision-making. Four of Durham Region's eight municipal Councils have so far come out officially against the building of the incinerator – Ajax, Oshawa, Clarington and Pickering.

Despite the concerns and opposition of local councils and citizens, the Region continues to press forward with its plan to build the incinerator – using arguments and rationales that have been proven again and again [by members of the public opposing incineration] to be false and ignoring alternatives and options proven to be successful - as well as much better for our health and our environment.

I have so much evidence to back up these assertions that I have put it all together in a separate document, which is attached (*Attachment # 1 – Detailed Complaint Against the Regional Municipality of Durham & the Government of Ontario*). Please note that every issue I raise in this document has been brought to Regional Council *at least* once by delegations. Even so, the majority of bureaucrats and regional councillors have chosen to ignore these issues and instead focus myopically on their goal to build an incinerator. The Region dresses up the process as one of public consultation but has orchestrated the process to end in the decision that they want – incineration.

It is my hope that upon reviewing my complaint, you will move forward to investigate what is happening in Durham Region and at the provincial level. Citizens and local councils are putting up a hard fight but the Region – and the province – keep on with the push for incineration. Consider these words from our unelected Regional Chair Roger Anderson, quoted in the Feb. 29th edition of our local newspaper:

*"If a local council says it's an unwilling host, it's unfortunate, but the process will continue," he said. "Local council has their local issues. Regional council has the big-picture issues. The fact is, it's a Regional decision."*

Thank you for your time and consideration. I would appreciate if you could confirm the receipt of this correspondence.

Sincerely,

Kristin Duare McKinnon-Rutherford  
59 Short Crescent  
Courtice, Ontario  
L1E 2Z6  
(905) 432-3120  
[kdmr@sympatico.ca](mailto:kdmr@sympatico.ca)

## **Enclosures:**

### ***Main Attachment***

Attachment 1 - Detailed Complaint against the Regional Municipality of Durham

### ***Ancillary Attachments***

Attachment 2 - Responding to the Region

Attachment 3 - Incineration Today and Tomorrow: The Effects on Durham Region's (and Neighbour's) Children

Attachment 4 - EU Incinerator Policy 1

Attachment 5 - EU Incinerator Policy 2

Attachment 6 - EU Incinerator Policy 3

Attachment 7 - EU Incinerator Policy 4

Attachment 8 - EU Incinerator Policy 5

Attachment 9 - EU Incinerator Policy 6

Attachment 10 - EU Incinerator Policy 7

Attachment 11 - EU Policy - Strategies on the Prevention of Waste

Attachment 12 - EU Policy - Waste Framework

Attachment 13 - EU Policy - Product Related Environmental Policies

Attachment 14 - EU Policy - Burden on Natural Resources

Attachment 15 - EU Policy - Environment Action Program

Attachment 16 - EU Policy - Prevent and Recycle

Attachment 17 - EU Policy - Packaging

Attachment 18 - Canadian Energy-from-Waste Coalition Registers Political Lobbyist

Attachment 19 - Genivar News

Attachment 20 - Assessing the Risk Assessment - An excerpt from *Debunking the Myths of Incineration*

Attachment 21 - Waste Prevention & Recycling (EU)

Attachment 22 - Incinerators are Impeding the Transition to Sustainability

Attachment 23 - Metroland Editorial - Air Quality Report to Little, too Late

**Appendix 8 – Complaint to the Environmental Commissioner of Ontario –  
Details of Complaint**

**ATTACHMENT 1**  
**DETAILED COMPLAINT AGAINST THE**  
**REGIONAL MUNICIPALITY OF DURHAM<sup>1</sup>**  
**& THE PROVINCE OF ONTARIO**

- Where to Start: Incinerator Primers – Page 2
- My Complaint against the Regional Municipality of Durham – Page 4
  - Durham Region has consistently presented misinformation about the incinerator to Council, Council Committees and the public – page 4
  - Durham Region Has Used Pressure and Attack Tactics To Get What They Want (The Building Of An Incinerator) – Page 13
  - There Are Many Flaws In The Environmental Process to Approve the Incinerator – Page 14
  - Clarington’s Mayor & Regional Councillors Fail to Represent the Local Municipality – Page 17
  - Other questionable Tactics – Page 19
- Durham’s Actions Don’t Fit Promises Made – Page 20
- My Complaint against the Government of Ontario – Page 26
- Parting Words – Page 33

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<sup>1</sup> The Regional Municipality of Durham is made up of the local municipalities of Ajax, Brock, Clarington, Oshawa, Pickering, Scugog, Uxbridge and Whitby.



## **WHERE TO START – INCINERATOR ‘PRIMERS’**

### **Cole’s Notes on Incineration**

Before reviewing this complaint, I respectfully request that you read *Attachment 21 – Incinerators are Impeding the Transition to Sustainability*. This easy-to-read, 5-page article is like the ‘Cole’s Notes’ of incinerator information. Reviewing it will help you to wade through the contents of this complaint.

### **In-depth Research into Incineration**

*Debunking the Myths of Incineration* <http://snipurl.com/1ynzx>

For more detailed research, I refer you to my report, *Debunking the Myths of Incineration*. I researched and prepared this report for Durham Regional Council and presented it to them on November 21, 2007.

In the report, I present 21 myths about incineration that have been used as the rationale to build an incinerator in Durham Region (and elsewhere). I then ‘debunked’ every myth with evidence-based, factual information. Despite my (and many other delegations) providing this information, Regional Councillors and bureaucrats who want the incinerator continue to put forth these myths as they try to ‘sell’ the incinerator to the public.

The myths that they [Durham Region politicians and bureaucrats supporting the building of an incinerator] endorse (which are debunked in my report) include:

- We have to do this now, we have a garbage crisis!
- Zero waste strategies are impossible and impractical.
- There are no alternatives [to incineration].
- An incinerator will not complete with diversion.
- We need to look after our waste in our own back yard. (This argument is made despite the fact that Durham Region's landfill solution for bottom ash from the incinerator – which is considered toxic residue in the Europe Union<sup>2</sup> - is to send it to Northumberland, Peterborough or the City of Kawartha Lakes.<sup>3</sup>)
- We have to trust the process.
- We haven't made a decision yet.
- You don't understand the whole issue so don't jump the gun.
- There are incinerators in Europe and the US [and everything is fine there].
- "Sweden is regarded as one of the cleanest countries in the world" and they have incinerators.
- Incineration is safe.
- Research referenced by opponents to incineration is out of date with the technology we would use.
- We are protected by the Ministry of the Environment / the government.
- Landfills are bad and / or worse than incineration (this is a very popular myth).
- This is a choice between landfill and incineration (this is a very popular myth, too).
- Other things put dioxins in the air, like forest fires, fireworks and barbeques!
- The emissions you see coming out of the stack are mostly water vapour.
- Incineration provides an alternative energy source.
- The project is financially responsible.
- Let's wait for the site specific / technology specific risk assessment before we decide what the risks are.

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<sup>2</sup> Thomas, Pat (2007). The Lethal Consequences of Breathing Fire. The Ecologist; 06/09/2007. I have a PDF version of this document available upon request.

<sup>3</sup> O'Meara, Jennifer (2007). County could bid for incinerator waste. Northumberland News.com: Wed October 31, 2007; October 24, 2007, Ajax has slow burn over incinerator – 'Very, very important questions not answered yet.' I have a PDF version of this document available upon request.

## **MY COMPLAINT AGAINST THE REGIONAL MUNICIPALITY OF DURHAM**

The details of my complaint follow. Please note that this is just the 'tip of the iceberg' here in Durham Region. There are *many* more examples that other activists and delegates could share with you around the Region's manipulation of information and process on the path to Durham's 'ultimate waste solution'.<sup>4</sup>

### **1) Durham Region has consistently presented misinformation about the incinerator to Council, Council Committees and the public.**

#### ***a) Durham Region's Incineration Brochure Full of Misinformation***

On October 9, 2007, Durham Region hosted a 'waste fair' in Courtice, a community which just happened to be short-listed at the time to host the incinerator. At the waste fair, the Region handed out a brochure of questions and answers, designed to inform the public about the incinerator. The information provided in the brochure is comprised of half-truths and lies by omission. There was no opportunity for those opposing incineration to share their views with the public - save for community members who stood outside and handed out information sheets to those leaving the 'fair'. Durham Region staff harassed these community members and tried to force them to leave, even though the community members were on public property.

In response to the Region's brochure, I prepared the document, *Responding to the Region* (Attachment 2). In this document, I took the verbatim content from the Region's brochure and responded to it in detail, providing evidence-based information that the Region left out of their publication.

I sent *Responding to the Region* to all Durham Region Councillors, Clarington Councillors and Durham and Clarington Clerks in early January 2008. I received no formal response to my submission although one Regional Councillor from Pickering did forward the document to the Ontario Minister of the Environment, John Gerretsen.

Today, Regional staff and councillors supporting the incinerator continue to spread the mistruths that appear in the Durham Region brochure. And the brochure is *still* being handed out to the public: Most recently the unchanged brochure was distributed to the public at the February 27 Energy Conservation Fair in Oshawa. The questions and answers from the brochure were also included in a Durham Works newsletter that went out to all Region residents [via Canada Post airmail] late last year.

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<sup>4</sup> Durham Region Chair, Roger Anderson, was quoted in Clarington This Week (September 14, 2007) as saying, "We deem waste from energy [i.e., incineration] as the ultimate waste solution." I have a PDF version of this document available upon request.

## ***b) Durham Region Runs False Ads about Recyclables***

In an advertisement that appeared in the October 19, 2007 edition of Clarington This Week, the Region stated that they do not collect certain recyclables because there is no market demand for them. This is not true for most of the items featured in the ad, many of which are made from polystyrene and are actually in very *high demand*. Indeed, according to a December 17, 2007 article in the Mississauga News:

*"We believe that a different business model can succeed and that polystyrene recycling has a strong future," said Talkowski. The market for polystyrene and recycled plastic products in North America is currently growing at 14 per cent annually.'*

In an effort to address this misinformation, I showed the advertisement to Regional Council during a delegation that I did this fall (I believe in November 2007). I explained that the information in the Durham Region advertisement was false and I provided evidence to back up my statement. Please see pages 14 and 15 of my report, *Debunking the Myths of Incineration* for the detailed information that I presented to Regional Council on this matter.

### *It's not over yet!*

Apparently speaking to Regional Council is not enough. After seeing similar claims (about market instability in recycling) in the local newspaper, I was compelled to write a letter to the Editor about the issue, which was published.

*Dear Editor,*

*[Regional Works Commissioner] Cliff Curtis says that Durham doesn't recycle certain plastics – specifically Styrofoam and plastic film - because there is no demand for them.*

*According to the Recycled Plastics Market Database ([www.plasticsresource.com](http://www.plasticsresource.com)), there are 11 Ontario companies buying recycled Styrofoam and 21 buying other forms of this plastic (polystyrene). Across the US, over 200 companies purchase these recyclables. The database results are similar for plastic film.*

*So why does Durham Region say that there is no market demand? If municipalities across the province would institute high quality, coordinated recycling systems, supplies of product would increase - thus removing any so-called market instability. Such collaboration would also allow municipalities to consolidate related recycling costs.*

*The irony is that incineration has a documented history as the most expensive waste management 'solution.' So our Region is being "quite cautious" about the recycling industry – which has established a significant infrastructure for taking our waste products – but is willing to take a huge risk on the guaranteed financial disaster of incineration.*

*Recycling creates more jobs, uses less energy, creates less pollution, poses less threat to the environment and our health and is much cheaper than incineration. So why are we even having this discussion?*

### *A little bit of irony*

For years Durham Region has been sending polystyrene plastics to landfill when it could have been sending them for recycle about an hour's drive away – to the Canadian Polystyrene Recycling Association in Mississauga (established in 1991).

Unfortunately, in December of 2007, the Canadian Polystyrene Recycling Association suspended operations, stating the lack of **supply** as one of the main reasons for this decision.<sup>5</sup> The company has since been purchased by a new owner and will re-open this spring. Once again, Durham Region has the opportunity to send polystyrene to this plant, rather than choosing to send these high-demand recyclables to landfill. (Another activist recently informed Works Commissioner, Cliff Curtis about the reopening of the plant and asked if Durham Region would start collecting polystyrene recyclables. In response, Mr. Curtis repeated the 'stable demand' mantra.)

### *Flying in the face of promises made*

In his introduction to the *Municipality of Durham Region Annual Report (2006)*, Chairman Roger Anderson said that the Region would look at the incineration option only "*after aggressive diversion efforts has been exhausted.*"

Considering the information offered above in this section, it is clear that the Region – and Mr. Anderson – have not met this most basic of requirements. And the information that I have provided to you refers only to polystyrene – there are many other recyclables that Durham Region does not currently collect.

For more examples of the promises that Durham Region is breaking, see *Durham's Actions Don't Fit Promises Made* starting on page 20 of this report.

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<sup>5</sup> For more information about the closing and reopening of the plant, please see The Mississauga News: March 4, 2008, *Polystyrene Recycling Plant Re-Opens* and December 27, 2007, *Styrofoam Recycler Forced to Close*. I have a PDF version of this document available upon request.

***c) Durham Region Spreads Misinformation about Emission Standards and Incinerator Safety***

At an Agricultural Advisory Committee Meeting in November 2007, Regional staff told Committee members that European standards (re: emissions for incinerators) are similar to ours. Staff also stated that Europe "is going the way of incineration" and has completely "rejected landfill." Neither of these statements is true but they have both been repeated many times by Regional staff members, including Works Commissioner, Cliff Curtis.

In response to this incident, I sent a memo to the Agricultural Advisory Committee countering the misstatements made by Durham Region staff and providing evidence to back up my claims. I never received any confirmation that this memo was received or acted upon.

*Like comparing apples and oranges*

I have done in-depth research into both Ontario and European standards and regulations regarding incineration. For an analysis of Ontario's regulations, please see *Attachment 3 - Incineration Today and Tomorrow: The Effects on Durham Region's (and Neighbour's) Children* – pages 12 through 21. For information about the European Union's standards, please see Attachments 4 through 17.

I am by far not the only one who has countered assertions like those coming from Durham Region bureaucrats. In fact, an entire document has been written on this subject: *Ontario's Waste Management Challenge – Is Incineration an Option?* (<http://snipurl.com/1z5sl>). I strongly recommend you take a look at this document, which provides detailed recommendations for the Ontario government – and what they must put into place before they adopt incineration as a waste strategy.

### What the EU has to say

You might also want to consider this information, which comes from the European Union and directly contradicts the assertions made by staff that Europe "is going the way of incineration" and has completely rejected landfill (source: See *Attachment 21*):

*"The [European Union] Commission's original plans towards a Thematic Strategy on Waste (2003) were articulated around four 'building blocks':*

- *Instruments to promote waste prevention: e.g. information exchange on national incentive systems for consumers, waste prevention plans;*
- *Instruments to promote waste recycling: e.g. landfill taxes, producer responsibility, tradable certificates (used in the UK), "Pay as you Throw" schemes, incentive systems;*
- *Measures to close the waste recycling standards gap in order to create a level playing field for recycling: e.g. extending the IPPC directive to the whole waste sector or determining quality standards for recycling;*
- *Accompanying measures to promote waste prevention and recycling: improving the legal framework, promoting research and development, promoting demand for recycled materials."*

*"As a first step, a revision of the EU Waste Framework Directive (COM (2005) 667 final) has been submitted to Council and Parliament for approval. The new draft directive merges with the existing directives on hazardous waste and repeals the Waste Oils Directive which is now considered outdated. Here are the main elements of the proposed new strategy:*

- ***Life-cycle approach:*** *The strategy proposes to look beyond the pollution caused by waste to consider its potential contribution to a more sustainable use of natural resources and raw materials. This aspect is dealt with in a separate strategy, also presented on 21 December, on the sustainable use of natural resources*
- ***Prevention:*** *Member states will be required to develop waste prevention policies that will "reach out to the individuals and businesses responsible for waste generated in the first place. These will have to be adopted within three years following the adoption of the revised waste framework directive. Follow-up reports will have to be submitted every three years afterwards.*
- ***Recycling:*** *EU-wide environmental standards on recycling will be adopted to "support the development of an EU market for secondary (recycled) materials."*
- ***Simplifying existing legislation:*** *This is also a major priority which will apply along the principles of the Commission's 'better regulation' initiative.*
- ***Targets:*** *The new strategy does not impose specific waste recycling or prevention targets. The Commission therefore says it is "not expected to result in any quantifiable financial costs" on member states and businesses.*
- ***Incineration:*** *A revision of the IPPC Directive (Integrated Pollution Prevention and Control) will be tabled that will set "an ambitious benchmark" to improve energy recovery from municipal incinerators. The Commission says the new energy efficiency benchmark "will determine whether an incinerator can be identified as a recovery facility instead of a disposal facility." (My comment: In other words, incineration's current status as one-up on landfill [in the EU waste hierarchy] because incineration is considered recovery is on shaky ground and the EU is currently questioning whether it is any better than landfill.)*

***d) The Region continues spreading misinformation about Europe and Incineration***

At the January 23, 2007 Regional Council meeting, Durham Region Commissioner of Works Cliff Curtis again stated that the regulatory framework for incinerators in the European Union is basically the same as the framework in Ontario. As proven above in the section 1c, *Durham Region Spreads Misinformation about Emission Standards and Incinerator Safety*, this statement is false.

I again addressed this erroneous information in an email that I sent to all Regional and Clarington Councillors on January 24, 2008. I also sent the email to the respective Clerks. I never received any confirmation that this memo was received or acted upon.



***e) Someone Stacked the Deck – Industry Supports Spread of Misinformation about Incineration***

A Mr. Ed McLellan from Peterborough just happened to appear at a January 10, 2008 forum that the local CAW hosted in an attempt to provide balanced information about incineration to the public. This fellow presented himself as a concerned citizen wanting to spread the truth about incineration. He followed with a number of false statements in favour of incineration and challenged the CAW environmental committee to a public debate. His challenge was accepted but Mr. McLellan never followed up with a proposal for the event.

On January 23, Mr. McLellan showed up as a delegate in front of Durham Region Council, again apparently as a 'concerned citizen'. He went on again to list a number of so-called facts about incineration that are just not true. Interestingly enough, Mr. McLellan waved good-bye to the consultants who have been pushing the incinerator agenda on his way out of Council Chambers after his presentation.

In a letter to the editor of the *Peterborough Examiner* a short time later, Mr. McLellan stated that he had been invited to speak in front of Regional Council on January 23rd. Mr. McLellan did not say this during his presentation to Durham Region Council however – he led Councillors to believe he attended only out of his desire to spread the 'truth' about incineration.

When I presented to Regional Council on January 23, 2007 I told them of a report I had written responding to Mr. McLellan's many false and unsupported claims about incineration. I sent this report to the Regional and Clarington Councillors on January 24, 2007 (copy available on request). I also sent the email to the respective Clerks. I never received any confirmation that this memo was received or acted upon.

### ***f) Sweden Shows Up to Spread More Half-Truths about Incineration***

Mr. Schonning, a representative from the Swedish Embassy in Ottawa, appeared in front of Regional Council on January 23, 2007. He spoke about incineration in Sweden but in the process of his presentation, left out some very vital facts that illustrate that incineration is not the perfect waste solution in Sweden.

I prepared and sent out to Durham and Clarington Councils and their respective Clerks, an email outlining the information that Mr. Schonning left out of his January 23<sup>rd</sup> presentation to Regional Council. I sent this email on January 24, 2008. I never received any confirmation that this memo was received or acted upon. The information that I outlined and that Mr. Schonning left out included that:

- Fly ash landfill is not permitted in Sweden (because the chloride concentrations exceed current limit values) so they export it to other countries. If (EU) regulations come into place banning the export of fly ash, which is toxic, those regulations will have significant repercussions in Sweden.<sup>6</sup>
- Some jurisdictions, like Sweden, have had to actually import waste to keep incinerators going.<sup>7</sup> Mr. Schonning did admit in front of Clarington Council later (see *Clarington Joins In* below) that Sweden also cuts down trees and burns them when there isn't enough garbage to burn!
- In 2006, Sweden passed legislation to tax the incineration of municipal waste in order to encourage recycling.<sup>8</sup> Ironically, Durham Region proponents of incineration have claimed that Europe's taxing of landfill is an indication of its disfavour as a method of disposal.

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<sup>6</sup> Swedish Environmental Protection Agency (2005). A Strategy for Sustainable Waste Management: Sweden's Waste Plan. I have a PDF version of this document available upon request.  
<sup>7</sup> Global Alliance for Incinerator Alternatives / Global Anti-Incinerator Alliance (GAIA) (2003). Waste Incineration: A Dying Technology. I have a PDF version of this document available upon request.  
<sup>8</sup> Sweden, Government of (2007). Implementation of the EU Sustainable Development Strategy – Sweden's report to the European Commission, June 2007. I have a PDF version of this document available upon request.

- Regarding emissions, Mr. Schonning shared 2004 figures, which illustrated decreases in a number of emissions. We can only guess that his failure to use more current 2006 figures was likely due to the fact that these figures show:<sup>9</sup>
  - o A **28% increase in nitrous oxide** emissions (to 2,180 tons per year) from Sweden's 29 incinerators between 2004 and 2006.
  - o A **38% increase in particulates** (to 33 tons per year) from Sweden's 29 incinerators in the same time frame.
  - o A **5% increase in mercury emissions** (to 39 kg per year) from Sweden's 29 incinerators in the same time frame.
  - o A **14% increase in dioxin emissions** (to .8 g per year) from Sweden's 29 incinerators in the same time frame.
  - o A **300% increase in cadmium emissions** (to 15 kg per year) from Sweden's 29 incinerators in the same time frame.

Note: To read about the toxic effects of these emissions on children, see *Attachment 3 – Incineration Today & Tomorrow*.

#### Clarington joins in

In a delegation to Clarington Council on January 28, I directly addressed the facts that Mr. Schonning left out of his presentation to Regional Council (see *Debunking the Myths of Incineration*, starting on page 62) as well as the larger issue of dishonesty in the process.

Clarington Mayor Abernathy (who wants an incinerator in Clarington despite Council's official position<sup>10</sup>) then went ahead and invited Mr. Schonning to speak in front of municipal council on February 13 as part of an advertised effort to 'inform the public' – knowing full well from my delegation that Mr. Schonning did not offer a balanced presentation! At the latter meeting, Mr. Schonning again shared misinformation about incineration Sweden by - leaving out the negatives and accentuating the positives.

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<sup>9</sup> Swedish Association of Waste Management RVF 1998- 2006, Svensk avfallshantering 1998-2006. I have a PDF version of this document available upon request.

<sup>10</sup> For months while decisions were being made at the Regional level and Clarington's local level about the incinerator [because a 'decision hadn't been made yet'], Clarington Mayor Abernathy went to community organizations all over Clarington and played an industry-produced video endorsing incineration. This activity was challenged in a number of delegations [by other citizens] to Clarington Council as well as in the local media and on the Clarington Watchdog website.

## **2) Durham Region Has Used Pressure and Attack Tactics to Get What They Want (The Building of an Incinerator)**

### ***a) Durham Region Staff Threaten Oshawa Council***

On January 21, 2008, Oshawa Council openly discussed that senior staff at Durham Region had contacted Oshawa Councillors and 'threatened' to re-open a landfill site in Oshawa if the Councillors did not vote to support incineration. The discussion was initiated by Councillor April Cullen (also a Regional Councillor) who said she resented the Region's approach. She asked if other councillors had heard of this tactic and Mayor Gray said that he too had received the same 'threat.'

I addressed this incident in an email to Regional and Clarington Councillors, and their respective Clerks, sent on January 24<sup>th</sup>. I never received any confirmation that this memo was received or acted upon – although one Regional Councillor passed on my email to Minister of the Environment, John Gerretsen.

### ***b) Durham Region Attacks Members of the Public***

When delegations present viable options and alternatives to incineration in front of Regional Council, they often are attacked – personally, professionally, you name it. When the arguments used in these attacks are challenged and exposed as irrelevant, Council members continue to use them regardless (see section 1 of this complaint).

The credibility of anyone who is offering alternatives to incineration is examined with a 'fine tooth comb'...however, the same due diligence is not applied to speakers who support the incinerator (see section 1 e and f in this report). Said Regional Council Chair Roger Anderson (January 23, 2007) of a motion to set a goal for 70% diversion in the Region: "*You'd better be prepared for the cost, implementation and policing of it.*" No such due diligence has applied for those arguing for incineration – despite a mountain of evidence that shows how costly and poorly policed the incineration industry is (see *Debunking the Myths of Incineration* – sections starting on pages 50, 62, 68, 77, 93 and 107).

I addressed this issue in front of Clarington Council on January 28, 2007 and in an email to Clarington and Regional Council, and their respective Clerks, on January 24, 2008. I never received any confirmation that this memo was received or acted upon.

### **3) There Are Many Flaws in the Environmental Process to Approve the Incinerator (Here Are A Few Examples):**

#### ***a) Peer Reviewers Find Numerous Flaws in the Environmental Assessment (EA) Process***

Peer reviewers [hired by Clarington Council to review the EA process] and Clarington staff found so many flaws in the process that they recommended that Durham Region delay the final selection of a preferred site until such a time as a technology and vendor have been selected, and the business case - clearly indicating the cost to taxpayers - has been completed and adopted by the Regional Council. Yet Regional Council has moved full steam ahead, saying it must 'follow the process'.

#### ***b) Durham Region deviates from EA Terms of Reference***

Durham Region has deviated on the set Terms of Reference approved by the Ministry of the environment and not informed Council of these deviations. For example, in the January 16, 2008 Durham Region Finance & Administration Committee meeting, the Committee had to demand that Commissioner of Works Cliff Curtis produce, in writing, confirmation from the Ministry that changes made in the process were acceptable to the MOE. Mr. Curtis apparently said changes were approved but had no proof. Regional Council was not informed of these changes or why they took place – the concern was brought forward by public delegations.

#### ***c) Risk Assessment Process Rife with Conflicts of Interest***

The group completing the Generic Health and Environmental Risk Assessment (Jacques Whitford) for the incinerator in Durham Region is listed as a member of the Canadian Energy-From-Waste Coalition. This coalition is registered as a provincial lobby group (see *Attachment 18*). This group is also, apparently, carrying out the site-specific health and environmental risk assessment. I think we all know how that is going to turn out. To say we have a conflict of interest here is a vast understatement. Of course a company that is linked with the incineration industry is going to find that it is safe to build an incinerator!

**d) Public Consultation Process Rife with Conflicts of Interest**

The groups that carried out the public consultation elements of the Environmental Assessment process (Jacques Whitford and MacViro) in Durham Region are listed as part of the Canadian Energy-From-Waste Coalition as well. This coalition is registered as a provincial lobby group (see *Attachment 18*). While MacViro isn't specifically included on the lobby listing, Genivar is – and that company has recently purchased 52.8% of MacViro Holdings Inc (see *Attachment 19*).

Again, you have to question the reliability of public consultation done by two companies with a vested, financial interest in the incineration industry. It would be surprising if their consultation process came out any other way than in support of incineration, making Regional Councillor Rick Johnson's January 23, 2008 comment a little hard to take: "This is the answer that the public came up with."

**e) Pollution Burden of Chosen Site Ignored**

Clarington's Courtice site was chosen as the final site for the incinerator even though, buried deep in the appendices of documents provided through the site selection process,<sup>11</sup>

are figures very clearly showing that the Clarington's **current** burden of pollution is thousands of times higher than that at an alternate site (East Gwillimbury) that was not chosen (see above table). Further, the East Gwillimbury site was not chosen because a stream runs through it - yet the Courtice site is right next to Lake Ontario, an already compromised water system.

**Comparison of Industrial Emissions  
(Tonnes/Year) Within 20 km of both sites**

Industrial Emissions	CO	NOx	PM	PM10	PM2.5	SO2	VOC
Clarington Totals	4392.0	6089.0	700.0	571.0	274.0	8703.0	4525.0
E. Gwillimbury Totals	50.2	5.1	77.1	81.9	41.2	0.3	1137.3

CO = Carbon monoxide  
 NOx = Nitrous oxide  
 PM = Particulate matter  
 SO2 = Sulphur dioxide  
 VOC = Volatile organic components

FYI, Every chemical in the above table is toxic to child development. See page 12 of *Attachment 3 - Incineration Today and Tomorrow: The Effects on Durham Region's (and Neighbour's) Children* for the details.

For another perspective on this issue, please see Attachment 23 – Metroland Editorial – *Air quality report too little, too late*.

<sup>11</sup> Annex A, Report on Air Quality Impacts, Applications of Short-List Evaluation Criteria from the Durham/York Residual Waste Study EA Assessment (September 2007). Thank you to Kerry Maydem for preparing this table and Wendy Bracken for presenting it to Regional Council on December 12, 2007.

***f) The Risk Assessment Process is Extremely Flawed***

There are a number of flaws in the risk assessment process that have been raised [by those opposed to incineration] but ignored by Regional Council and staff. For an example of such information brought forward to Council, please see *Attachment 20 – Assessing the Risk Assessment* – an excerpt from *Debunking the Myths of Incineration*. I presented this report, including this analysis of the generic risk assessment, to Regional Council on Nov. 21, 2007. During my Jan. 23, 2008 presentation to Council, I asked why nobody was addressing the concerns raised in my analysis. I received no response, official or otherwise.

#### **4) Clarington's Mayor & Regional Councillors Fail to Represent the Local Municipality**

##### ***a) Clarington Council Limits the Public's Opportunity to Speak***

On December 10, 2007, Clarington Council passed a new procedural bylaw (BY LAW 2007 227), which included limiting delegations to five minutes from ten. Considering this action was taken right in the midst of debate over the hottest issue to hit Clarington in some time (Clarington being the home of the final site selected for the incinerator) it is at the very least is a slap in the face of the public and their right to speak out on such an important issue.

##### ***b) The Mayor Fails to Represent Clarington***

According to these new bylaws (BY LAW 2007 227), it is the duty of the Mayor to "represent and support the decisions of Council declaring its will and explicitly and implicitly obeying its decisions in all things" (3.1.1n). At the January 14, 2008 Clarington Council meeting, Clarington Council voted in favour of a motion asking Durham Region to delay their decision to accept the recommended location until they have decided what technology will be used and have completed a number of other studies - including the site-specific human health and ecological risk assessment.

Clarington Mayor Abernethy did not bring the position of his local Council forward to the next Regional Council meeting, held January 23, 2008. In fact, he has not brought any of Clarington's positions regarding incineration forward to Regional Council. Mayor Abernathy and Clarington's two Regional Council's voted for the incinerator on Jan 23, 2008 and completed ignored the motion passed by Clarington Council on Jan 14.

At the January 28, 2008 Clarington Council meeting, local Clarington Councillor Gord Robinson asked the Mayor why he was not carrying out his duty as per Bylaw 2007 227, section 3.1.1n. Councillor Robinson had to ask the question three times but the Mayor did not answer it.



### ***c) Clarington Mayor and Councillors Waste Public Dollars***

In early 2008, Clarington Mayor Abernethy, two Regional Councillors and one local councillor from Clarington went to Burnaby, B.C. to tour an incineration facility there – despite many such controversial trips made by Regional Councillors and bureaucrats in the past.<sup>12</sup> The trip cost taxpayers \$12,000 but because the facility is built and operated by Veolia-Montenay – a company that has submitted a bid to build Durham’s incinerator – Councillors could not speak to anybody working in the plant. They could only speak about the incinerator to local politicians, who would obviously be in favour of the facility since it has been built. When defending the most recent trip, Regional Councillor Charlie Trim stated that Councillors must do their “due diligence” and educate themselves.

However, whenever I informed Regional and Clarington Councillors about the Waste Resource Management Symposium that Nova Scotia is hosting this April – an excellent opportunity to learn about the alternatives to incineration that are so apparently lacking<sup>13</sup> according to our proincineration politicians – I received only one response (from a local municipal councillor). It seems due diligence is only required when it supports the push for incineration.

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<sup>12</sup> See May 24, 25 and 26, 2006 issues of Clarington This Week. I have a PDF version of this document available upon request.

<sup>13</sup> Our Regional Councillors and bureaucrats need only do a Google search of Durham, environment or Durham / incineration or Durham / incineration / alternatives, and the Durham Environment Watch website ([www.durhamenvironmentwatch.org](http://www.durhamenvironmentwatch.org)) will come up in the top three results. The site features more than two dozen articles and other resources about alternatives to incineration.

## **5) Other Questionable Tactics**

### ***a) Region Schedules Most Vital Committee Meetings Away From the Communities Most Affected***

While the incinerator is the result of a so-called partnership between Durham and York Regions, York has reduced its financial commitment to only 12%. Yet, two of the MOST important [in their impact on Durham and Clarington residents] Joint Waste Management Committee meetings have been held in *York Region*, a significant distance for citizens from our communities to travel:

- The March 2007 meeting at which the short list of sites for the incinerator was released was held in York Region (in Newmarket) even though four of the five sites short-listed sites were in Durham Region.
- The January 8, 2008 meeting regarding the adoption of the Consultants' recommended site was held in York Region (Newmarket) even though the final site being considered – and inevitably chosen - was located in Clarington, Durham Region.

As they say, once is a happening, twice is coincidence, and three times is a pattern...

The April 2008 Joint Waste Management Committee meeting – another key meeting at which the business case for the incinerator will be presented (no, it hasn't been done yet!) - is currently scheduled to be held in York Region. This arrangement has been made despite the fact that Regional Councillors raised concerns about the past key meetings being held out of the Region. Delegates at the February 27, 2008 Committee meeting also urged that the April meeting be held in Durham Region; to date it is unclear whether this change will be made.

## **Durham's Actions Don't Fit Promises Made**

**If our governments, at all levels, truly followed through on their environmental and health commitments, this would be Durham Region's motion:**

Given all of the information that has been provided in *Debunking the Myths of Incineration* and whereas,

- The Stockholm Convention was adopted in 2001 in response to the urgent need for global action to protect human health and the environment from Persistent Organic Pollutants (POPs).<sup>14</sup>
- Canada has signed the United Nations Environmental Program's Stockholm Convention which stipulates that we must apply best environmental practices and use the best available techniques to reduce or avoid existing and new sources of POPs, which include the dioxins and furans that are created through incineration.
- It is well known that incinerators, no matter how well designed, lead to the production of some levels of dioxins and furans as the by-products of combustion of wastes and the Stockholm Convention's annex includes a list of sources that have the "potential for comparatively high formation and release of such unintentional POPs" which includes, "co-incinerators of municipal, hazardous or medical waste or of sewer sludge..."<sup>15</sup>
- The Stockholm Convention also states that POPs wastes must be "disposed of in such a way that the persistent organic pollutant content is destroyed or irreversibly transformed so that they do not exhibit the characteristics of persistent organic pollutants..." The treaty also says that POPs cannot be recycled in any way.<sup>16</sup>
- "All twelve substances identified in the Stockholm Convention are targeted for virtual elimination under Canada's Toxic Substances Management Policy," adopted by the Canadian federal government in 1995.<sup>17</sup>

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<sup>14</sup> Environment Canada (undated). The World's Contribution: The Stockholm Convention. [www.eg.gc.ca](http://www.eg.gc.ca). I have a copy of this document in PDF, available upon request.

<sup>15</sup> Basel Action Network Secretariat, c/o Asia Pacific Environmental Exchange [APEX] (2001). The Stockholm Convention: Marking the Beginning of an End of Waste Incineration? I have a copy of this document in PDF, available upon request.

<sup>16</sup> Basel Action Network Secretariat, c/o Asia Pacific Environmental Exchange [APEX] (2001). The Stockholm Convention: Marking the Beginning of an End of Waste Incineration?

<sup>17</sup> Basel Action Network Secretariat, c/o Asia Pacific Environmental Exchange [APEX] (2001). The Stockholm Convention: Marking the Beginning of an End of Waste Incineration?

- The Canadian Environmental Protection Act (CEPA) and the CCME (Canadian Council of Ministers of the Environment) have slated dioxins and furans for virtual elimination due to their "extraordinary environmental persistence and capacity to accumulate in biological tissues."<sup>18</sup>
- The Ontario Government has hired Hugh MacLeod to head up an Ontario Climate Change Secretariat.<sup>19</sup>
- Ontario Premier Dalton McGuinty has expressed alarmed concern over the fact that one of every four Ontarians is dying of cancer and that we need to better understand the influence of chemical toxins [in plastics] on our environment and our quality of life.<sup>20</sup>
- Ontario Premier Dalton McGuinty has struck an expert panel to examine potentially carcinogenic chemicals in children's products and food containers, and has announced that his government will introduce a new law in the spring of 2008 that will "reduce and eliminate some toxic chemicals in both industrial emissions and consumer products."<sup>21</sup>
- The Ontario government has brought forward legislation banning the smoking of cigarettes in vehicles when children are present. A local newspaper ended an article about this new law with this comment: "*It only makes sense to keep moving in a progressive way when it comes to smoking. Protecting defenceless, vulnerable children from something they have no way to prevent is only common sense and humane.*"<sup>22</sup> Our Medical Officer of Health said, "*I think it's clear that second hand smoke affects the health of infants and children...*"<sup>23</sup>

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<sup>18</sup> Canadian Council of Ministers of the Environment (2001). Canada-wide

Standards for Dioxins and Furans. I have a copy of this document in PDF, available upon request.

<sup>19</sup> Gillespie, Kerry. Climate change czar aims to paint province green. Toronto Star: March 7, 2008. I have a copy of this document in PDF, available upon request.

<sup>20</sup> Black, Debra & Gillespie, Kerry (2007). Premier to strike panel to study potentially carcinogenic chemical found in plastics. Toronto Star: November 21, 2007.

<sup>21</sup> Black, Debra & Gillespie, Kerry (2007). Premier to strike panel to study potentially carcinogenic chemical found in plastics. Toronto Star: November 21, 2007.

<sup>22</sup> Clarington This Week. Law to prevent smoking in cars with kids only humane. Friday, March 7, 2008. I have a copy of this document in PDF, available upon request.

<sup>23</sup> Clarington This Week, Smoking ban in cards with kids applauded in Durham. Thursday, March 13, 2008. I have a copy of this document in PDF, available upon request.

These comments are quite ironic when you consider that the unborn child and breastfeeding infant are most at risk to the toxins and chemical in incinerator ash and emissions.<sup>24</sup> Their risk is so much higher because they can take in “50 times more pollutants than adults relative to their weight”.<sup>25</sup> Further, I identified in my report, *Incineration Today and Tomorrow* (see *Attachment 3*), a minimum of 53 incinerator emissions that are known to have one or more toxic effects on children. So apparently, when it comes to the known risks of smoking, we will protect our children but when it comes to the known risks of burning garbage, they are on their own.

- Durham Region has identified as one of its six strategic objectives (Durham’s Community Strategic Plan), **“to protect and enhance the environment.”**<sup>26</sup>
- Durham Region has identified as one of its six strategic objectives (Durham’s Community Strategic Plan), **“Safe, healthy and caring communities.”**<sup>27</sup>
- Durham Region has initiated a Regional Climate Change Roundtable with a goal to reduce green house gases and climate impacts.<sup>28</sup>
- Durham Region has indicated that their Long Term Waste Management Strategy Plan will ensure residents will have feasible waste reduction and waste disposal opportunities that are environmentally friendly and financially responsible.<sup>29</sup>
- Durham Region has stated that it would look at the incineration option **“after aggressive diversion efforts has been exhausted”** and this is definitely not the case to date.<sup>30</sup>

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<sup>24</sup> British Society for Ecological Medicine (2005). *The Health Effects of Waste Incinerators*. Moderators: Dr. Jeremy Thompson and Dr. Honor Anthony. I have a copy of this document in PDF, available upon request.

<sup>25</sup> British Society for Ecological Medicine (2005). *The Health Effects of Waste Incinerators*. Moderators: Dr. Jeremy Thompson and Dr. Honor Anthony. I have a copy of this document in PDF, available upon request.

<sup>26</sup> Durham, Region of (2007). *Overview of Durham Region*. [www.region.durham.on.ca](http://www.region.durham.on.ca); Durham Region (2006). *Annual Report, The Regional Municipality of Durham, Ontario, Canada, for the year ended December 31, 2006*. I have a copy of this document in PDF, available upon request.

<sup>27</sup> Durham, Region of (2007). *Overview of Durham Region*. [www.region.durham.on.ca](http://www.region.durham.on.ca); Durham Region (2006). *Annual Report, The Regional Municipality of Durham, Ontario, Canada, for the year ended December 31, 2006*.

<sup>28</sup> Durham, Region of (2007). *Council Highlights. Volume 5, Issue 5*. [www.region.durham.on.ca](http://www.region.durham.on.ca). I have a copy of this document in PDF, available upon request.

<sup>29</sup> Durham, Region of (1999). *Region of Durham Long-Term Waste Management Strategy Plan: 2000 to 2020*. Prepared by the Region of Durham Works Department, Waste Management Services. Distributed at public information meeting on October 9, 2007. I have a copy of this document in PDF, available upon request.

- Durham Region has signed the Toronto and Region 2007 Inter-governmental declaration on clean air as part of its participation in the Smog Summit and has thus recognized that [all emphasises mine]:
  - Scientists and physicians have linked air pollution to “premature deaths, hospitalizations, increases in chronic heart and lung diseases and acute respiratory disease” and that “**even small increases** in air pollution elevate the risk of health impacts, **particularly among those who are vulnerable and sensitive to air pollution such as young children, the elderly and those with pre-existing diseases** [emphasis mine].”<sup>31</sup>
  - “Research data has also indicated that air pollution has a **detrimental impact on terrestrial and aquatic ecosystems and buildings.**”<sup>32</sup>
  - “**Air pollution, through health effects, environmental degradation, property damage and reduced visibility, adversely impacts the economy and the quality of life.**”<sup>33</sup>
  - “The major pollutants [in the air in the GTA] are **nitrogen oxide, sulphur dioxide, volatile organic compounds, coarse particulate matter, fine particulate matter and carbon monoxide**”<sup>34</sup> and research shows that incineration has resulted in the release of all of these pollutants as well as many other compounds whose potential for harm is yet unknown.<sup>35</sup>

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<sup>30</sup> Durham Region (2006). Annual Report, The Regional Municipality of Durham, Ontario, Canada, for the year ended December 31, 2006. I have a copy of this document in PDF, available upon request.

<sup>31</sup> Clean Air Summit (2007). Smog Summit 2007. Toronto and Region 2007 Intergovernmental Declaration on Clean Air. I have a copy of this document in PDF, available upon request.

<sup>32</sup> Clean Air Summit (2007). Smog Summit 2007. Toronto and Region 2007 Intergovernmental Declaration on Clean Air.

<sup>33</sup> Clean Air Summit (2007). Smog Summit 2007. Toronto and Region 2007 Intergovernmental Declaration on Clean Air.

<sup>34</sup> Clean Air Summit (2007). Smog Summit 2007. Toronto and Region 2007 Intergovernmental Declaration on Clean Air.

<sup>35</sup> Irish Doctors Environmental Association (2006). Incinerators and their Health Effects. Note: Source cited include the World Health Organization; Twenty reasons why incineration is a losing financial proposition for host communities. Source cited: Platt, Brenda A. (2004). Resources up in Flames: The Economic Pitfalls of Incineration Versus a Zero Waste Approach in the Global South; Carter-Whitney, Maureen (2007). Ontario’s Waste Management Challenge – Is Incineration an Option? Canadian Institute for Environmental Law and Policy. I have copies of this documents in PDF, available upon request.

- **“Smog and climate change are two atmospheric problems that share common sources”**<sup>36</sup> and incineration creates greenhouse gases.
  - “Actions to **reduce greenhouse emissions** are often associated with reductions of other atmospheric emissions that contribute to smog and its associated health, economic and ecosystem effects.”<sup>37</sup>
- The Town of Ajax has an established the Environmental Advisory Committee whose mandate includes the goal to promote: “the preservation, conservation, protection and enhancement of the natural environment in the Town of Ajax.”<sup>38</sup>
  - The City of Oshawa has stated that they are “leading the way in environmental stewardship” green initiatives, including the establishment of an Environmental Advisory Committee and Cabinet as well as the hiring of an Environmental Coordinator.<sup>39</sup>
  - The City of Oshawa has shown tremendous progress in increasing diversion rates, from 37% in 2005 to 58% in 2006.<sup>40</sup>

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<sup>36</sup> Irish Doctors Environmental Association (2006). Incinerators and their Health Effects. Note: Source cited include the World Health Organization; Twenty reasons why incineration is a losing financial proposition for host communities. Source cited: Platt, Brenda A. (2004). Resources up in Flames: The Economic Pitfalls of Incineration Versus a Zero Waste Approach in the Global South; Carter-Whitney, Maureen (2007). Ontario’s Waste Management Challenge – Is Incineration an Option? Canadian Institute for Environmental Law and Policy. I have a copy of this document in PDF, available upon request.

<sup>37</sup> Irish Doctors Environmental Association (2006). Incinerators and their Health Effects. Note: Source cited include the World Health Organization; Twenty reasons why incineration is a losing financial proposition for host communities. Source cited: Platt, Brenda A. (2004). Resources up in Flames: The Economic Pitfalls of Incineration Versus a Zero Waste Approach in the Global South; Carter-Whitney, Maureen (2007). Ontario’s Waste Management Challenge – Is Incineration an Option? Canadian Institute for Environmental Law and Policy. Irish Doctors Environmental Association (2006). Incinerators and their Health Effects. Note: Source cited include the World Health Organization; Twenty reasons why incineration is a losing financial proposition for host communities. Source cited: Platt, Brenda A. (2004). Resources up in Flames: The Economic Pitfalls of Incineration Versus a Zero Waste Approach in the Global South; Carter-Whitney, Maureen (2007). Ontario’s Waste Management Challenge – Is Incineration an Option? Canadian Institute for Environmental Law and Policy.

<sup>38</sup> Ajax, Town of (2007). Environmental Advisory Committee. [www.townofajax.com](http://www.townofajax.com) I have a copy of this document in PDF, available upon request.

<sup>39</sup> Oshawa, City of (2007). A Green and Sustainable Future. Inside Oshawa: 2007, 5th edition. I have a copy of this document in PDF, available upon request.

<sup>40</sup> Durham Region (2006). Annual Report, The Regional Municipality of Durham, Ontario, Canada, for the year ended December 31, 2006. I have a copy of this document in PDF, available upon request.

- The Town of Whitby achieved the highest diversion rate in Durham Region at 68%.<sup>41</sup>
- The Town of Pickering has established an Office of Sustainability and committed to reduce greenhouse gas emissions (and incineration emits greenhouse gases) by 6% by 2012 in line with Kyoto and endorses an approach to community decision-making that accounts for all resources and all costs, including economic, environmental and social.<sup>42</sup>
- The Town of Whitby's Official Plan outlines as a purpose providing policies that ensure quality of life and secure the health, safety, convenience and welfare of *present and future* [italics mine] inhabitants and that sustain the environment.<sup>43</sup>
- The Municipality of Clarington has established the Living Green Community Advisory whose purpose is, "To develop a community strategy that would include local actions, policies, programs and projects for climate change, energy conservations, clean energy alternatives and promoting more sustainable development practices ...The Green Community Strategy will focus on the community's local response to the interrelations between energy, health, climate change and development."<sup>44</sup>

We, the Councillors of Durham Region hereby move that the plans to build an energy-from-waste incinerator, and all related processes, agreements and costs are brought immediately to an end and not considered again as a waste management solution for Durham Region until the Region has fully maximized and optimized waste prevention initiatives, extended producer responsibility initiatives and a fully comprehensive re-use, reduction and recycling program, the latter of which incorporates all recyclables that are currently collected in all other regions and municipalities in Ontario.

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<sup>41</sup> Durham Region (2006). Annual Report, The Regional Municipality of Durham, Ontario, Canada, for the year ended December 31, 2006. I have a copy of this document in PDF, available upon request.

<sup>42</sup> Pickering, Town of (2007). Sustainability in Pickering. [www.sustainablepickering.com](http://www.sustainablepickering.com).

<sup>43</sup> Whitby, Town of (2007). Introductory Discussion Paper: Vision 2031. Town of Whitby Planning Department: June 2007. I have a copy of this document in PDF, available upon request.

<sup>44</sup> Clarington, Municipality of (2007). Terms of Reference: Green Community Advisory Committee. Approved by Council Resolution # C274-07. I have a copy of this document in PDF, available upon request.



## **MY COMPLAINT AGAINST THE GOVERNMENT OF ONTARIO**

### **The Ontario Government Promotes Interests of the Incineration Industry**

In a recent Globe & Mail article (*Ontario to explore turning trash into energy*, Feb. 20, 2008, <http://snipurl.com/205iz>) the Ontario government announced that they will be funding research into how to turn garbage into energy. The article goes on to explain that the research, which is being contracted out by request for proposals, will look at which is the better technology for turning garbage into energy – capturing methane gas from landfill or plasma gasification (a fancy term for incineration).

Despite this stated need for researching these two options, a Ministry of the Environment representative was quoted in this article as saying, "Energy from waste [incineration] is obviously an attractive proposal because it not only deals with waste, but it produces energy and therefore helps meets energy needs." It seems that perhaps she has already made up her mind, doesn't it?

#### **A Foregone Conclusion**

I believe that the results of this 'research' will be a foregone conclusion and after the province has spent more of our money, they will announce that they have proven incineration is the best solution for the province – paving the way for the incineration industry, which has been chomping at the bit to sell its product in the province and country. I believe this is a foregone conclusion because:

- **Options are Limited to Landfill & Incineration** - Once again, as is the case in Durham, only two options are being offered to the so-called waste problem – landfill and incineration. There is no mention of the many other options and alternatives to managing waste, including comprehensive diversion. See *Debunking the Myths of Incineration*, pages 81 to 87, for more information at <http://snipurl.com/1ynzx>.
- **The Highly Flawed 'Garbage-as-Energy' Argument is Used** - Once again, as in Durham Region, the province is using the 'garbage as energy' argument even though there is an abundance of evidence that shows that energy created from incineration is dirtier than that created by the coal-fired energy plants that Ontario has pledged to close down. Further, evidence shows that diversion saves much more energy than incineration creates. The energy issue clouds the waste issue and thus these topics must be addressed separately. For information disputing the energy-from-waste concept, please see:
  - *Incineration - A Reasonable Energy Option?* <http://snipurl.com/205jc>
  - *Debunking the Myths of Incineration* <http://snipurl.com/1ynzx>, *Incineration Provides an Alternative Energy Source*, starting page 91
  - *Attachment 22 – Incinerators are Impeding the Transition to Sustainability*

- **Ontario Government Makes Approval of Incinerators Easier** - This past spring (2007), under the guise of exploring new technologies, Dalton McGuinty and the Ontario government streamlined the Environmental Assessment process to make it easier for incinerators to be approved in Ontario. This decision was made despite plenty of evidence from around the world that incineration creates enormously to greenhouse gases and human health problems.
- **Municipalities Across Ontario – and Canada – are being wooed by incineration** – Halton and Niagara Regions, as well as Toronto, have considered the incineration although they have not gone forward with these plans. Quinte,<sup>45</sup> Northumberland<sup>46</sup> and Peterborough<sup>47</sup> areas may be looking at incineration as a waste management option in the near future. I do not believe it is a coincidence that the incineration industry has been actively wooing politicians and bureaucrats (see next point) and the public (Recently, they have been running television ads on CTV promoting their service. The ad shows a garbage truck down a road with the lights coming on as the truck goes by...).
- **Incinerator CEO has Strong Ties to Provincial & Federal Liberal Governments** - According to NOW magazine (<http://snipurl.com/205i8>), Rob Bryden - a deep Liberal insider and the largest single donor to Dalton McGuinty's 1996 leadership campaign - is also the president and CEO of Plasco Energy group – an incinerator company.

Premier McGuinty mentioned Plasco this spring – while praising the idea of exporting Ontario incinerator technology - and that company has built a brand new incinerator in Ottawa with the Premier's blessing (and \$6.6 million dollars from the federal government's *Sustainable Development Technology Foundation*<sup>48</sup>).

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<sup>45</sup> I have been contacted by citizens in Quinte wanting to oppose the building of an incinerator there.

<sup>46</sup> Mr. Angelos Bocopoulis was recently hired as the new head of works in Northumberland County. Mr. Bocopoulis is the fellow who came up with the waste 'solution' of incineration for both Durham Region and Toronto. Ironically, he is also the man who came up with the 'solution' to send garbage to Michigan – a decision now being reviled in Durham. Interestingly enough, Durham Region has been in negotiations to send its incineration bottom ash to Northumberland. The incineration world is a small one. Source information for these assertions available upon request.

<sup>47</sup> A source of mine in the County of Peterborough indicated that they will explore the incineration option in the future.

<sup>48</sup> Turning Garbage into Power. The Ottawa Construction News: January 2007. I have a PDF version of this document which is available upon request.

Mr. Bryden also has strong ties to the Federal Liberal leader, Stéfán Dion and to past Liberal Deputy Prime Minister, John Manley. He has been linked to the Sponsorship Scandal through his ownership of the Ottawa Senators NHL team. Further, Rod is the brother of Liberal Senator, Hon. John Bryden. For more details regarding these assertions, please see the following articles (available upon request):

- Liberal Party of Canada (2008). Our Team: Hon. John Bryden. [www.liberal.ca/senators\\_e.aspx?id=1080](http://www.liberal.ca/senators_e.aspx?id=1080).
  - Tabuns, Peter, Environment Critic, Ontario NDP (2007). McGuinty Gets 'Money to Burn' Trash. Ontario New Democratic website: April 2, 2007,
  - Cash, Andrew (2007). Getting Burned: Is McGuinty's plot to burn trash Just a reward for a loyal donor? NOW magazine: April 5 – 11, 2007.
  - EMS and PPEC come out against thermal treatment (2007) (no author listed). Solid Waste and Recycling: Vol 12, Issue 3, April/May 2007.
  - Canada Newswire (2007). Incineration is not the Answer to Ontario's Waste Crisis: EMS. March 29, 2007, Ottawa.
  - De Grandpré, Hugo (2006). Dion doit 50 000 \$ à un de ses conseillers à la transition. La Presse: Dec 6, 2006. Translated to English: Dion has [owes] \$50,000 to one of his advisors to the transition.
  - Norwak, Peter (2006). Bryden hailed as just the man to aid Dion with Transition. Financial Post: Dec 5, 2006
  - CTV News (2003). NHL's Senators to seek bankruptcy protection. CTV News: Jan 7, 2003.
  - CBC News (2003). Critics decry Manley's efforts on behalf of NHL team. CBC News: January 4, 2003
- **Provincial Minister of the Environment Endorses Many Myths about Incineration** – In a recent interview in the Kingston Whig Standard, Minister of the Environment John Gerretsen commented that he has:

*"...nothing against incineration, personally, I think incineration has been used in Europe for 30, 40, 50, 100 years because they don't have the capacity to landfill the way we do here. You can put scrubbers on that can take just about anything out of the atmosphere. The biggest argument against incineration has been that if you burn garbage, people will no longer recycle. I think you can overcome that problem by only allowing incinerators in certain places."*

It is frightening and shocking how ill-informed Mr. Gerretsen is about incineration. In this one statement he endorses these well-worn myths of incineration (see *Debunking the Myths of Incineration*, <http://snipurl.com/1ynzx>, for details on each of these myths):

- An incinerator will not compete with diversion (see page 31 of *Debunking*).
- There are incinerators in Europe [and everything is fine there] (see page 50 of *Debunking*).
- Incineration is safe (see page 68 of *Debunking*).
- This is a choice between landfill and incineration (see page 86 of *Debunking*).

Furthermore, Mr. Gerretsen's comment that scrubbers can take 'just about anything' out of the atmosphere is blatantly, and dangerously, false. The evidence to dispute this 'fact' is so great is it difficult to know where to start. I refer you to these sections of *Debunking the Myths of Incineration* (<http://snipurl.com/1ynzx>):

- *Incineration Is Safe*, page 68
- *Research Referenced By Opponents To The Incinerator is Out of Date With The Technology That We Would Use*, page 74
- *Appendix 3 – Air Emission from Incineration*, page 121
- *Isn't This Enough Reason to Run Away Screaming?*, page 107

I also refer you to page 10 of this complaint, # 1f, *Sweden Shows Up to Spread More Half-Truths about Incineration*. It hardly seems that 'nothing' is coming out of the stacks in Sweden. In 2006 Sweden saw<sup>49</sup>:

- A **28% increase in nitrous oxide** emissions (to 2,180 **tons** per year) from Sweden's 29 incinerators between 2004 and 2006.
- A **38% increase in particulates** (to 33 **tons** per year) from Sweden's 29 incinerators in the same time frame.
- A **5% increase in mercury emissions** (to 39 **kg** per year) from Sweden's 29 incinerators in the same time frame.
- A **14% increase in dioxin emissions** (to .8 **g** per year) from Sweden's 29 incinerators in the same time frame.
- A **300% increase in cadmium emissions** (to 15 **kg** per year) from Sweden's 29 incinerators in the same time frame.

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<sup>49</sup> Swedish Association of Waste Management RVF 1998- 2006, Svensk avfallshantering 1998-2006.

- ***Incinerator Lobbyist Prepares Durham Risk Assessment & Public Consultations*** - The Canadian Waste Coalition recently registered as a provincial lobbyist (see *Attachment 18*), which means the incinerator industry is active is lobbying the provincial government to support their interests.

Interestingly enough, **Jacques Whitford** - the company that is responsible for completing the risk assessments of the incinerator in Durham Region and (with **MacViro**) for running the public consultation sessions that lead to the 'choice' of incineration - is signed up as part of this lobby coalition. Also listed in the lobby application is **Genivar**, which now owns over 50% of MacViro (please see *Attachments 18 and 19*).

## **Ontario Government Ignores Well-Researched Advice**

It appears that while the Ontario government is more than willing to listen to those with a vested interest in the incineration industry, it chooses not to heed well-researched, objective advice. The Canadian Institute for Environmental Law and Policy has produced an extensively researched document entitled *Ontario's Waste Management Challenge – Is Incineration an Option?* (<http://snipurl.com/1z5sl>) Published in 2007, this paper was written by Maureen Carter-Whitney.

The Government of Ontario should be following the reports recommendations, which can be summarized as follows:

### **Recommendation 1**

The Ontario government should fund an independent, fair and impartial study of the true costs of incineration and a scientific assessment of the risks and benefits of incineration technologies currently available in order to raise public awareness and inform decision-making.

### **Recommendation 2**

The Ontario government should evaluate incineration technology primarily on the basis of whether or not it is an appropriate means of waste disposal rather than as a means to provide energy.

### **Recommendation 3**

The Ontario government should establish a strong, effective and comprehensive provincial waste management policy that includes enforceable reduction targets and timetables, and develops provincial regulations and coordinated regional approaches to using the best available technology for dealing with residuals.

### **Recommendation 4**

The Ontario government should make use of life cycle analysis methods to consider all of the environmental, economic and social costs implicit in the various options of managing waste.

### **Recommendation 5**

The Ontario government should strive for as near 'zero waste' as possible, by establishing short and long term reduction targets for waste generation to guide policy decisions and creating strong policies and regulations that provide policy certainty, work towards the prevention of waste creation, improve recycling rates and challenge consumer choices.

### **Recommendation 6**

The Ontario government should introduce strong policies and regulations on extended producer responsibility requiring industry to take responsibility for managing consumer-generated waste itself, and should strengthen the powers of Waste Diversion Ontario through amendments to the *Waste Diversion Act* to increase the role of industry stewardship in reducing and recycling waste.

**Recommendation 7**

The Ontario government should develop and implement strict packaging regulations to prevent and reduce consumer goods packaging.

**Recommendation 8**

The Ontario government should consider introducing a regulatory requirement for municipalities to use economic and other tools to promote waste reduction in Ontario, including garbage bag fees and limits on the number of garbage bags collected.

**Recommendation 9**

The Ontario government should ensure the development of progressively higher regulatory standards, monitoring and enforcement, regardless of the disposal options pursued, to address environmental and human health impact concerns and pursue a goal of virtual elimination of dioxins and furans and toxic pollutants. In connection with this, the government should review Guidelines A-7 and A-8 in light of current regulatory standards in the US and EU.

**Recommendation 10**

The Ontario government should ensure that the public is meaningfully informed about and engaged in the development of provincial waste management policies and regulations. Public consultation should be designed to encourage public commitment to the waste policies adopted, improve public awareness and knowledge of waste management issues, be open to all for real participation and build trust and understanding.

**Recommendation 11**

The Ontario government should provide to the public an annual summary of the volumes and weights of municipal and industrial wastes, household hazardous wastes and hazardous industrial wastes. The summary should include information about the end disposition of the wastes by different methods, whether by reuse, recycling, landfilling or incineration.

## **PARTING WORDS**

*"We have reached a tipping point when it comes to understanding the role that we play in transforming our environment and our health.*

*There is no longer any debate that we have transformed and changed the nature of the environment in which we live and work and therefore affected our health and the ways we will live and die...that is no longer debated.*

*We used to think our health came from God, and whether we were blessed with good health or cursed with bad health was simply fate. Now we understand that we can control a lot more of our health but we can't do it alone."*

Devra Davis, Epidemiologist & Director of Environmental Oncology, Pittsburgh

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Respectfully submitted by  
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## **Appendix 9 – Letter to Clarington Council**

April 23, 2008

Patti L. Barrie, CMO  
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Municipality of Clarington  
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[pbarrie@clarington.net](mailto:pbarrie@clarington.net)

*“Whoever is careless with the truth in  
small matters cannot be trusted with the  
important matters.”*  
Albert Einstein

**Regarding: Clarington Green Community Advisory Committee**

Dear Patti,

Please consider this letter formal communication to the Council of the Municipality of Clarington.

I am writing in regards to the Chairmanship of the Green Committee. I am writing to express my concerns with this issue, both as a citizen of Clarington and as a past community member on the Green Committee.

My concerns with this issue are two-fold. First off, I am concerned that the Mayor has lobbied actively for a position that, according to Municipal protocol, is not to be held by the Mayor or another member of Council (i.e., he isn't following the rules). Secondly, I am alarmed at the excuses being made by some committee, community and Council members to justify these actions of the Mayor (i.e., it is 'okay' that he isn't following the rules).

As you may be aware, I attended the first two Green Committee meetings as a community member. At the first meeting, when Mr. Carlos Salazar asked for nominations for Chair, I recall being surprised both at the speed at which he handled the issue (he seemed very pressed to move the decision forward) and the speed to which Ms. Reid responded with her nomination of the Mayor.

I recall quite clearly thinking, "Well, THAT was planned out ahead of time." Little did I know how accurate my perceptions were! And I have found it quite disturbing to find out these three tidbits of information since I left the Green Committee:

- That Ms. Reid had her own, unstated bias on the committee as a past campaign worker for the Mayor (she represented herself only as someone concerned about the environment);
- That the Mayor was involved in 'backroom' politicking to obtain the nomination of Chair of the Committee (something that other committee members didn't have the contacts within the committee to do, had they wanted to lobby for the Chairship);
- That, by taking the position of Chair, the Mayor *chose* to - and is *still choosing* to - contravene municipal protocol.

*"The quality of a leader is reflected in the standards they set for themselves."*  
Ray Kroc

At the first Green Committee meeting, I raised concerns about the speed at which the Chair was nominated and chosen. I pointed out that other Committee members might not be willing to step up for the position because 1) they were new to the committee, 2) they couldn't fully understand what the role of Chair might entail (I certainly didn't at that first meeting) and 3) they weren't well acquainted with other committee members (how do you nominate someone you don't know?). I suggested an interim or rotating Chair until committee members could gain familiarity around the role and responsibilities of the Chair position. (I understand there is even a regulation in committee protocols to address the provision of an interim Chair, but this alternative option was not mentioned in the meeting.)

Mr. Salazar did not seem too happy with my suggestion or with the feedback from fellow Green Committee member, Mr. Ron Collis. Mr. Salazar seemed instead to really be pushing to get the job done (the job being the nomination of the Mayor). I only succeeded at being nominated as Co-chair, a risk I realized I was taking by opening my mouth to express my opinion. Other members of the committee were surprisingly quiet during this entire discourse ... perhaps because, unlike me, they had received one of those now infamous calls from the Mayor's Executive Assistant.

*"Nearly all men can withstand adversity. If you truly want to test a man's character, give him power."*  
Abraham Lincoln

Before I agreed to join the Green Committee, I asked two very specific questions of the Council representative who called me (I am sorry, I cannot recall his name). Firstly, I asked about the time commitment required for the committee. Secondly, I asked whether the Green Committee would be taken seriously by Council or whether it had just been set up to make the Council or the Mayor look good [because 'green is in].' I made it *very* clear that if the latter was the case, I had better things to do with my time and my energy.

I was assured that the work of the Green Committee would be taken seriously by Council and that joining the Green Committee would be a valuable experience for me and for the community. It seems crystal clear to me now that this is **not** the case and that I was put in the exact position that I stated was unacceptable: A pawn to advance someone else's [the Mayor, Ms. Reid, etc.] unstated political agenda. I find this reality to be *extremely* insulting to me, both as a citizen of Clarington and as a professional.

To me, these are the core issues:

- The Mayor has and is knowingly breaking the rules: It is as simple as that.
- The Clerk and staff of Clarington seem to think that the breaking of these rules is all right. My goodness, why do we even need to send a question like this to staff for input? Unlike many issues facing Clarington Council these days, this one seems pretty 'black and white' ... there are rules, they are being broken, they shouldn't be broken, undo the damage, don't do it again. A-B-C.

The argument put forward that the Mayor should be the Green Committee Chair because he brings credibility to the Committee is absolutely ridiculous. How does the Green Committee have any credibility at all when the Mayor is also one of the most active and vocal proponents of the greatest environmental threat facing Clarington in decades – the incinerator? And perhaps this connection explains why the incinerator hasn't even come up as a concern of the committee, despite the impact that this facility would have on many facets of the Committee's mandate? In my view, having the Mayor as a member of the Committee - let alone the Chair - *takes away* from the Committee's credibility rather than adding to it. (Tell me, how much have the Mayor's leadership tactics at the Council level brought credibility to our local government?)

*“Leadership consists not in degrees of technique but in traits of character; it requires moral rather than athletic or intellectual effort, and it imposes on both leader and follower alike the burdens of self-restraint.”*

Lewis H. Lapham

The argument put forward that the Mayor is the best to lead the Committee because of his many community connections is spurious. As should be obvious to *anyone* who has been near Clarington or Regional Council in the last year, there are many community citizens who are well established, well connected and *very* effective in their efforts to address local environmental issues. The Mayor is by far not the only qualified candidate and if perhaps the Council had reached out to some of the very qualified activists in the our community – rather than limiting its reach to one of the Mayor’s main campaign supporters – it wouldn’t now be in the position of having to choose the Mayor as the best option for Chair.

Finally, while I agree that the Green Committee – and any other community advisory committee for that matter – needs strong leadership it is simply not true that the Mayor has any extraordinary strength to offer in this regard. The most impressive and awe-inspiring community leaders that I have seen in action over the past eight months come from the very community that this Committee espouses to represent. The quality of your catch depends on where you cast your net.

To me the issue is about much more than the Mayor finagling his way into the Chairship of a community advisory committee. This incident is just one of many representing a significant impairment of attitude – and a very core lack of respect for the office and the citizens of Clarington - at the Mayoral level. Our Mayor’s disregard for rules - and apparent belief that he has some greater wisdom to offer our communities than any other citizen - is turning Clarington into an embarrassment and laughingstock. How do you ever hope to inspire people to solve complex challenges like the waste issue when our own Mayor cannot even muster up basic respect for his constituents? Because, my friends, this is the true, core issue facing us right now.

Leadership is not just about having the title, the elevated chair, a fancy necklace and the power to kick people out of meetings if you don’t like what they say. Leadership is about inspiring people with a vision and then motivating them to act towards achieving that vision.

If these kinds of shenanigans continue [blatant disregard for the rules by our highest municipal representative], how does Council ever truly expect to represent the people of Clarington, let alone to lead them?

I hope you will stand up and stop this behaviour. Set an example and a standard to which we can aspire rather than one that we abhor.

Respectfully submitted,

Kristin Duare McKinnon-Rutherford, HBSW, MSW  
Courtice, Ontario

*“One measure of leadership is the calibre of people who choose to follow you.”*  
Dennis Peer

## **Appendix 10 – Responding to the Region**

# RESPONDING TO THE REGION

## The Rest of the Story

Following is a list of questions and answers taken directly from Durham Region's energy-from-waste brochure (distributed to the public by their Works Department). After each question and answer from the Region, we provide the facts that are missing. For more information or to request the references for this article, please email Kristin McKinnon-Rutherford at [krispoo@sympatico.ca](mailto:krispoo@sympatico.ca).

### 1. You say that the new facility will produce energy. What kind and how much?

**Durham Region:** Similar thermal facilities in Europe are producing both electricity and heat in the form of steam or hot water that can be used for heating systems. The primary purpose of our facility will be to process the household waste (garbage) left over after diversion efforts such as recycling and composting.

The benefit of a thermal waste facility is that it produces steam that can be used as a heat and energy source for your homes. A thermal facility processing 250,000 tonnes per year of municipal waste will create enough energy to power approximately 15,000 homes. From an individual households perspective, the garbage left over after recycling and composting can produce enough electricity to run that households energy efficient lights.

**What they aren't saying:** Burning garbage is a very inefficient way to create energy. Three times the energy can be saved by recycling paper, five times by recycling plastics and six times by recycling textiles.<sup>1</sup> Recycling saves energy because materials that are diverted can be re-used. Burned materials are gone forever and must be replaced – which uses much more energy than incineration creates.<sup>2</sup>

Compared to other methods of creating energy, incineration is also the dirtiest, contributing the most to greenhouse gases.<sup>3</sup>

#### **DID YOU KNOW?**

*The incinerator industry has a documented history of overestimating the money to be made on energy sales. When energy profits fail, operating costs go up and residents usually pick up the slack in the form of higher taxes.*

### 2. What is the size of the proposed facility?

**Durham Region:** The proposed energy-from-waste facility will be designed for somewhere between a minimum capacity of 150,000 tonnes and a maximum capacity of 400,000 tonnes of waste per year. This maximum capacity was calculated to allow for future population growth within the Regions.

**What they aren't saying:** The operators of the incinerator can request an increase in tonnage from the Ministry of the Environment<sup>4</sup>, making the 400,000 tonne maximum meaningless.

#### **DID YOU KNOW?**

*Montgomery County, Maryland residents saw their taxes go up 55% to cover energy revenue shortfalls at the incinerator in their community.*

*In Claremont, New Hampshire, a dispute between a regional waste incinerator and the communities it served resulted in 29 nearby towns filing for bankruptcy. Bankruptcy court denied Claremont's claim and they had to raise taxes to cover their incinerator debts and contracts.*

If we fall below the 150,000 tonne minimum, the Region may have to pay fines to the incinerator operators. Historically, taxpayers cover these financial penalties through raised taxes.<sup>5</sup> It is also not uncommon for communities hosting incinerators to go bankrupt because operating costs are often higher than expected and municipalities are fined for not providing enough garbage to be incinerated.<sup>6</sup>

### 3. What if there isn't enough residential garbage to keep the thermal treatment facility working? Are you looking to accept garbage from other municipalities?

**Durham Region:** The operation of this facility does not depend on waste from outside Durham and York Regions. In 2005, Durham and York Regions shipped approximately 350,000 tonnes of residential waste to landfill, waste that could have potentially been processed at a thermal facility. In 2006, Durham and York Regions shipped roughly 330,000 tonnes.

**What they aren't saying:** According to Durham's 2006 Annual Report, 133,896 metric tonnes of waste went to landfill. This means that of the 330,000 tonnes noted in the answer above, 196,104 tonnes of that garbage figure comes from York Region.

Yet, York Region has committed to sending only 20,000 tonnes of garbage to our incinerator. Taking the 133,896 tonnes from Durham Region and the 20,000 tonnes from York gives us a total of 153,896 tonnes of garbage for burning, not 330,000.

Durham Region's *total* waste tonnage in 2006 was 239,663. Of this we diverted 44% - or 105,767 tonnes - through recycling and composting and sent 56% - or 133,896 - to landfill. If we increased our diversion rate to 70%, which many regions have easily achieved, we would have 71,899 tonnes (30% x 239,663) of waste needing disposal.<sup>1</sup> Add York's 20,000 tonnes and our total comes to 91,899. So why do we need an incinerator with a *minimum* 150,000 and maximum 400,000 tonne capacity?

A number of products collected elsewhere are not recycled in Durham Region. If we were to institute a comprehensive diversion program that includes all recyclable products and engages our industrial, commercial and institutional sectors, Durham Region would see a significant reduction in the amount of garbage we have to send to landfill or incineration.

If we go below the minimum tonnage required by agreement with incinerator operators, we definitely will be forced to take in garbage from other municipalities or risk financial penalties from incinerator operators.

#### **DID YOU KNOW?**

*Some jurisdictions, like Sweden, have had to actually import waste to keep incinerators going.*

*Ironically, Sweden exports the ash that results from incineration because it is so toxic that it cannot be legally landfilled in their own country. If the European Union bans the export of this type of waste - which is expected - Sweden will have nowhere to put its ash.*

*Sweden introduced a tax on municipal incineration in 2006 in order to encourage recycling.*

### 4. Will the air emissions from the thermal facility be safe?

**Durham Region:** The emissions that you see coming out of the stacks of these types of thermal facilities are mostly water vapour. Thermal facilities have strict monitoring programs in place to ensure the safety and protection of human health and the environment. The air emissions from our facility will meet, or exceed, ALL of the strict guidelines and standards set out by the Ontario Ministry of the Environment.

**What they aren't saying:** What we need to be concerned about is what we *can't* see coming out of the stacks. One incinerator in Sweden, for example, annually releases 58 tons of nitrogen oxide, 11.5 tons of sulphur, .82 tons of particulates, 3.5 tons of hydrogen chloride, 1.3 kg of mercury, .17 kg of cadmium, 1.8 kg of lead and .024 grams of dioxins into the atmosphere.<sup>7</sup>

#### **DID YOU KNOW?**

*Incinerator emissions are bad for us all, but pose a particularly high risk to developing children. Experts agree that the unborn child and infants who are breast-feeding are the most at risk of exposure, taking in 50 times more pollutants than adults relative to their weight.*

*In a recent report, one author identified a minimum of 53 pollutants emitted by incinerators that are toxic to fetuses and young children, including developmental, neuro, respiratory, reproductive, endocrine and immunotoxins, carcinogens and hormone disruptors.*

<sup>1</sup> Thank you to Barry Bracken for providing these calculations.



Sweden's numbers only include the emissions that they actually measure. Over 200 chemicals, contaminants and pollutants – many of which are dangerous toxins - have been identified in the incinerator emissions.<sup>8</sup> And the toxic effects of 88 to 90% of the chemicals released in emissions are unstudied and / or unknown.<sup>9</sup>

Regulations in place are limited and inadequate. The Ministry of the Environment requires the monitoring of only 8 contaminants emitted by incinerators.<sup>10</sup> Of these allowed contaminants, cadmium, lead, mercury and dioxins are associated with four or more toxic effects on children.<sup>11</sup>

The Ministry requires testing for these 8 chemicals only once within the first 6 months of operation and once a year thereafter. If an incinerator operator manages to keep dioxin and furan levels low for 5 years, they no longer have to test for them annually. Yet, dioxins and furans have been recognized internationally as two of the twelve most dangerous pollutants on the planet.<sup>12</sup>

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## 5. Will this facility release dioxins?

**Durham Region:** These facilities emit very small quantities of dioxins but these chemicals are also emitted by other sources as well. The annual quantity of dioxins emitted by thermally treating the residual waste from a typical household is equivalent to that same household burning approximately 15 logs in a woodstove or fireplace.

**What they aren't saying:** Whether or not dioxins are emitted by other sources is not at issue. What is at issue is that, for at least 35 years, an incinerator will be adding more dioxins into our atmosphere and our bodies... not to mention the hundreds of other contaminants that incinerators emit into our environment (see our answer to question 4).

### ***DID YOU KNOW?***

*There is no safe dose of dioxins. Dioxins affect us at a molecular level and are toxic at concentrations of one part per trillion – "a drop in 300 Olympic-sized swimming pools."  
May 31, 2007 – Toronto STAR*

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## 6. Will this new facility work in conjunction with our recycling and composting programs or will it discourage waste diversion efforts?

**Durham Region:** Our facility will manage ONLY the waste remaining after our diversion efforts. Waste diversion is a high priority for both Durham and York Regions. Through your efforts, Durham Region is now diverting more than 50 per cent of waste through the Blue Box and Green Bin programs. This number continues to climb. Durham Regional Council has committed to diverting 60 per cent of its waste by 2010. As such, the proposed thermal treatment facility is only being designed to handle Durham's residual waste AFTER 60 per cent diversion of waste has already been achieved.

Our efforts at diverting even more waste from landfill are increasing. We expect diversion to increase to 60 per cent when the integrated waste management program is rolled out to the remaining municipalities of Clarington, Scugog, Uxbridge and Brock. This full program will incorporate the major services currently in place in Ajax, Oshawa, Pickering and Whitby. This includes diversion through the Green Bin program (kitchen organics composting), Blue Box recyclables program (paper, cans, plastics), and composting of Leaf and Yard Waste. These municipalities have the benefit of our integrated waste management program consisting of weekly Blue Box and Green Bin collection with residual waste collection once every two weeks. And so, no, this facility will not discourage waste diversion from landfill.

### ***DID YOU KNOW?***

*Durham Region's claim that market demand is to blame for its limited recycling efforts does not hold up under close scrutiny. There are many companies across Ontario and the US that purchase recycled materials not currently collected in Durham Region.*

*Two thirds of the waste landfilled in Ontario is created by the commercial, industrial and institutional sectors, yet Durham Region does not have programs in place to encourage and enhance recycling in these sectors.*

**What they aren't saying:** (Please also see our answer to question 4.)

Because incinerators must run 24/7, they require an ongoing supply of garbage in order to operate, a scenario that does nothing to support separation and recycling.<sup>13</sup> The motivation to reduce, reuse and recycle is further hampered by arrangements that require municipalities to pay penalties if the guaranteed amount of waste is not provided for incineration.<sup>14</sup>

Incinerators also consume so much of local solid waste budgets that little money is left over for comprehensive recycling and compost programs.<sup>15</sup>

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## 7. Will there be any water pollution from this facility - surface and/or groundwater?

**Durham Region:** No, there will be no water pollution associated with this facility. There is no process associated with a thermal treatment facility that comes into contact with any surface or groundwater. Any water or other matter that may be discharged into the sewer system will be treated on site and will meet all of the requirements of the municipal sewer-use by-laws and the Ontario Water Resources Act.

**What they aren't saying:** The chemicals and pollutants released into the atmosphere as a result of incineration are very persistent. They evaporate and travel long distances through air and water. They can jump around the globe, riding the wind and particles of dust, settling to the earth in cool spots and then vaporizing and moving on again. Some of the most persistent chemicals can travel hundreds or thousands of kilometres.<sup>16</sup> There is no question that these contaminants would, subsequently, make their way into Lake Ontario and other bodies of water in and around Durham Region. They will also contaminate our soils, enter our food chain and make their way into our bodies.<sup>17</sup>

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## 8. Will this facility process household hazardous waste?

**Durham Region:** Many common household items contain hazardous materials such as lead, mercury and cadmium, and are therefore classified as household hazardous waste (HHW). All residents are urged to do their part in keeping our neighbourhoods clean and safe by bringing HHW to a licensed drop-off depot. The Region operates four such depots, they are located in Oshawa, Scugog, Brock, and Pickering. In addition, the Region of Durham hosts four e-waste and two HHW collection events every year at various locations across the Region of Durham where residents can drop off these materials free of charge.

**What they aren't saying:** The products we use today are made up of so many different substances that we really have no idea what we would be burning (think of the toxic toys that have recently been recalled). We know even less about what happens when we combine and then burn these substances.<sup>18</sup>

The Ministry of Environment's own guidelines identify a number of dangerous toxins that can result when garbage doesn't burn properly or completely. Even though these toxins present a danger to child development, mandatory testing is not required.<sup>19</sup>

### DID YOU KNOW?

*Nova Scotia is moving towards its vision of a truly sustainable economy, leading North America and the world in its innovation. Between 1996 and 2004, this strategy resulted in:*

- A network of 84 Enviro-Depots and five Regional Processing Centres.
- Centralized composting for the business sector in 53 of 55 municipalities.
- Recycling of 259,000 litres of paint in 2004 alone.
- Diversion of 5.6 million tires from landfill.
- Reduction of landfills by 75% and the end of all open burning.
- Creation of 1,300 jobs through recycling and by turning waste into resources.
- In 2001 alone, raised \$9 million through their deposit / refund system for bottles and achieved a return rate of 80%.

## BIBLIOGRAPHY

### References - General

1. Ajax, Town of (October 18, 2007). Report to General Government Committee: Comments on the Durham-York Residual Waste Study Environmental Assessment.
2. Ballweg, Mary Lou (2002). EA / NIH Study shows women with endometriosis at greater risk for disease. Source cited: Human Reproduction (Europe's leading reproductive medicine journal). [www.endometriosisassn.org](http://www.endometriosisassn.org).
3. Basel Action Network Secretariat, c/o Asia Pacific Environmental Exchange [APEX] (2001). The Stockholm Convention: Marking the Beginning of an End of Waste Incineration?
4. British Society for Ecological Medicine (2005). The Health Effects of Waste Incinerators. Moderators: Dr. Jeremy Thompson and Dr. Honor Anthony.
5. Canada Newswire (2007). Incineration is not the Answer to Ontario's Waste Crisis: EMS. March 29, 2007, Ottawa.
6. Cancer and the Environment Stakeholder Group, The (2007). Cancer and the Environment in Ontario: Gap Analysis on the Reduction of Environmental Carcinogens.
7. Cash, Andrew (2007). Getting Burned: Is McGuinty's plot to burn trash Just a reward for a loyal donor? NOW magazine: April 5 - 11, 2007.
8. Cavendish, Camilla (2006). Check out all that packaging. The Times (UK): 11/16/2006.
9. Clarington, Municipality of (2007). Update on Municipal Peer Review of the Durham / York Residual Waste Environmental Assessment. General Purpose and Administration Committee, September 4, 2007, File no. PLN 33.3.10.
10. Clean Air Summit (2007). Smog Summit 2007. <http://www.cleanairpartnership.org/smogsummit>.
11. Clean Air Summit (2007). Smog Summit 2007. Toronto and Region 2007 Intergovernmental Declaration on Clean Air. <http://www.vaughanchamber.ca/graphics/Smog%20Declaration%20attach.pdf>

12. Connett, Dr. Paul (1998). Municipal Waste Incineration: A Poor Solution for the Twenty-First Century. A presentation to the 4<sup>th</sup> Annual International Management Conference, Waste-to-Energy (Amsterdam).
13. Connett, Paul and Sheehan, Bill (2001, 2005). Citizens' Agenda for Zero Waste: A United States / Canadian Perspective – A Strategy that Avoids Incinerators and Eventually Eliminates Land Fills. Grassroots Recycling Network.
14. David Suzuki Foundation and Sierra Legal, The Pembina Institute, Canadian Environmental Law Association, Great Lakes United, Toronto Environmental Agency (undated; data sources cited 2002, 2005, 2006). Incineration of Municipal Solid Waste, Impact on Global Warming, Fact Sheet 1.
15. David Suzuki Foundation et al [as above] (undated; data sources cited 1994 to 2006). Incineration of Municipal Solid Waste, An Update on Pollution, Fact Sheet 2.
16. David Suzuki Foundation et al [as above] (undated; data sources cited 2001 to 2005). Incineration of Municipal Solid Waste, A Reasonable Energy Option? Fact Sheet 3.
17. David Suzuki Foundation et al [as above] (undated; data sources cited 1994 to 2007). Incineration of Municipal Solid Waste, Understanding the Costs and Financial Risks, Fact Sheet 4.
18. Detroit, City of (2007). Future Solid Waste Plan, Task Force Report. Detroit City Council Recycling / Environmental Task Force.
19. Domingo, Enver (2007). Let's Dump the Discard Mentality. The Hamilton Spectator: January 16, 2007.
20. Durham Environment Watch (2007). Incineration: Not Safe, Not Sensible, the Facts and Issues (Fact Sheet).
21. Durham Region (2006). Annual Report, The Regional Municipality of Durham, Ontario, Canada, for the year ended December 31, 2006.
22. Durham Region (2007). What "Spare The Air" Actions Can I Take If A Smog Alert Is Called? <http://www.region.durham.on.ca>
23. Earthtalk (2007). Burning Trash. E Magazine / The Environmental Magazine: Vol 18, Issue 1, January / February 2007.
24. East Gwillimbury, Town of (2007). Not a willing host to the Proposed Residual Waste Processing and Energy from Waste Facility.

25. EMS and PPEC come out against thermal treatment (2007) (no author listed). Solid Waste and Recycling: Vol 12, Issue 3, April/May 2007.
26. Endometriosis Association (sources dated 1993 to 2001). Endometriosis and the Toxic Link. [www.endometriosisassn.org](http://www.endometriosisassn.org).
27. Environment Canada (undated). The World's Contribution: The Stockholm Convention. [www.ec.gc.ca](http://www.ec.gc.ca).
28. Europa (2005). Waste (summarizes the European Union's approach to waste management). <http://ec.europa.eu/environment/waste/index.htm>.
29. European Parliament (2007). Major recycling operation for Europe's waste policy. Plenary Sessions: Environment.
30. Friends of the Earth (May 2002). Incineration and Health Issues.
31. Friends of the Earth Scotland (2002). Incineration or Something Sensible? A Briefing from Friends of the Earth Scotland.
32. Friesan, Barry and Murphy, Andrew (undated). Nova Scotia's Vision becomes Reality. Natural Resources Canada.
33. Gagging orders stopped ash probe (2002) (no author listed). The Evening Chronicle Newcastle (UK): 5<sup>th</sup> January 2002.
34. Global Alliance for Incinerator Alternatives / Global Anti-Incinerator Alliance (GAIA) (2003). Waste Incineration: A Dying Technology.
35. Global Alliance for Incinerator Alternatives / Global Anti-Incinerator Alliance (GAIA) (2007). Aiming for Zero Waste: Ten Steps to Get Started at the Local Level. Source cited: Brenda Platt (1994), Institute for Local Self-Reliance, Washington DC.
36. Global Alliance for Incinerator Alternatives / Global Anti-Incinerator Alliance (GAIA) (undated). Questions and Answers about Incineration.
37. Global Alliance for Incinerator Alternatives / Global Anti-Incinerator Alliance (GAIA) (undated). State-of-the-Art Incinerators: The Problems Won't Go Away.
38. Green, Lindsey A. (2001). A Less Trashy Nova Scotia – Recycling. National Institute of Environmental Health Sciences.
39. Greenpeace (2002). Anti-incineration activists take zero-waste message to Parliament. [www.greenpeace.org.uk](http://www.greenpeace.org.uk).

40. Greenpeace (2004). The Stockholm Convention's entry into force a victory for the environment and for our future. [www.greenpeace.org](http://www.greenpeace.org).
41. Gunther, Marc (2007). The end of garbage. Fortune Magazine; VOL. 155, NO. 5 - March 19, 2007.
42. Health Canada (2002). Air Pollution and Heart and Lung Disease.
43. Health Canada (2002). Air Pollution, Climate Change and Your Health.
44. Health Canada (2002). Outdoor Air Pollution and Your Health – What's the Cost?
45. Hunziker, Roger (2007). Garage: Burn it or Bury it? Brampton Incinerator is No Solution to Garbage Conundrum.
46. Institute for Clinical Evaluative Sciences (2006). The Burden of Asthma in Ontario – ICES Investigative Report.
47. Institute for Local Self-Reliance (2007). Blue Mountain Center Statement: Recycling and Composting Policy Agenda.
48. Irish Doctors Environmental Association (1999, 2004). Health Impacts of Waste Management Policies.
49. Irish Doctors Environmental Association (2006). Incinerators and their Health Effects. Note: Source cited include the World Health Organization.
50. Jackson, John (2007). Incinerators are not the answer to the garbage problem; EPR is the answer. PPS Review: April 2007.
51. Jones, Elgin (2007). Sickness in the Soil. Broward Times (Florida): Friday, August 10, 2007.
52. Laurance, Ben and O'Connell, Dominic (2007). Making a pile out of rubbish. The Sunday Times (UK): May 27, 2007.
53. Lease, Kelly (2002). Asian Countries Jump on the EPR Bandwagon. Institute for Local Self-Reliance: Facts to Act On, Release # 41, January 25, 2002.
54. McNaught, Anita (2001). Up in Smoke. Times of London: 07.07.2001.
55. National Environmental Research Institute (2005). State of the Environment in Denmark 2005 – Illustrated Summary.
56. Nova Scotia, the province of (1995). Solid Waste-Resource Management Strategy. [www.gov.ns.ca](http://www.gov.ns.ca).

57. Now (2005). Toronto's Last Gasp. Now Magazine: July 21 - 27, 2005, Vol. 24, No. 47.
58. Office of the Legislative Assembly of Ontario, Office of the Integrity Commissioner, Lobbyists Registration Office (2007). Canadian Energy-From-Waste Coalition registers provincial lobbyist.
59. Pengelly, L.D. (2007). Review of a Document for the Regional Municipality of Halton: Step 4A Identification and Description of Potential Health and Environmental Effects.
60. Platt, Brenda (1996). The Five Most Dangerous Myths about Recycling. Institute for Local Self-Reliance, Washington DC: September 2006.
61. Rachel's Environment & Health News (1993). Wall Street Journal Warns its Readers: Incinerators are Financial Disasters. Source cited: Wall Street Journal: August 18, 1993.
62. Schonning, Magnus (First Secretary, Embassy of Sweden) (2006). Swedish Waste Management - Charting an Energy from Waste Future: Producing Clean Power from Municipal Biomass. Canadian Urban Institute: June 14, 2006.
63. Smith, Dr. Lesbia F. (2007). Energy from Waste Facility in the Region of Durham. Prepared for the Medical Officer of Health, Durham Region.
64. Society of Chemical Industry (UK) (1991). Incineration Still a Hot Issue. Source cited: Chemistry and Industry: June 17, 1991, no. 12.
65. Swedish Environmental Protection Agency (2005). A Strategy for Sustainable Waste Management: Sweden's Waste Plan.
66. Thomas, Pat (2007). The Lethal Consequences of Breathing Fire. The Ecologist; 06/09/2007.
67. To burn or not to burn? (no author listed) (2007). The Sunday Times (UK): April 22, 2007.
68. Toronto Public Health (2007). The Air You Breathe – Smog and Your Health.
69. Toronto, City of (2007). Smog Alert Days in Toronto 2007. [http://www.toronto.ca/health/smog/smog\\_new.htm](http://www.toronto.ca/health/smog/smog_new.htm).
70. Twenty reasons why incineration is a losing financial proposition for host communities. Source cited: Platt, Brenda A. (2004). Resources up in

Flames: The Economic Pitfalls of Incineration Versus a Zero Waste Approach in the Global South.

71. United Nations Environment Program (UNEP) and UNEP's Information Unit for Conventions (2005). Ridding the World of POPs: A Guide to the Stockholm Convention on Persistent Organic Pollutants.
72. Van Steenis, Dr. Dick (2005). Incinerators are – WMD? Country Doctor website, <http://www.countrydoctor.co.uk>.
73. Whitford, Jacques (2007). Generic Human Health and Ecological Risk Assessment Study. Prepared for Durham-York Residual Waste Study.
74. Whitford, Jacques and Genivar (2007). Executive Summary: Thermal Facility Site Selection, Results of Step 7: Evaluation of Short List of Sites and Identification of Preferred Site.
75. Wilson, Monica (2006). Public Funds up in Flames: The Incineration Industry Seeks Renewable Energy Subsidies. Multinational Monitor (September / October 2006).
76. Zero Waste New Zealand Trust (undated, no author listed). Wasted Opportunity: A Closer Look at Landfilling and Incineration.



## References - Metroland / This Week

77. October 25, 2007, Clarington mayor 'puzzled' about Ajax' reaction to incineration. By Jennifer Stone
78. October 24, 2007, Ajax has slow burn over incinerator – 'Very, very important questions not answered yet.'
79. October 24, 2007, A year in, council still hasn't hit its stride. By Jennifer Stone
80. October 22, 2007, Green, blue or black – sorting out garbage. By Erin Hatfield
81. October 19, 2007, Framework for climate change committee laid out. By Erin Hatfield
82. October 05, 2007, Energy from waste draws new faces. By Erin Hatfield
83. October 03, 2007, Clarington's top politician grapples with complex issues in first year in office. By Tim Kelly
84. October 2, 2007, Incineration: Pro and Con
85. October 2, 2007, Public information sessions to detail site selection for incinerator. By Jennifer Stone
86. September 26, 2007, No surprise that Courtice is the preferred site - It's been a shoe-in from the start. By Jennifer Stone
87. September 25, 2007, Consultants detail why they picked Courtice for incinerator. By Jennifer Stone
88. September 18, 2007, Incineration makes people sick, says Green Leader. By Jennifer Stone
89. September 18, 2007, Clarington won't be making request for clarification from chairman – 'Perfectly clear' says mayor. By Jennifer Stone
90. September 17, 2007, Clarington working to take the pressure off residential taxpayers, says mayor. By Jennifer Stone
91. September 14, 2007, All the facts missing on incineration. By Chris Bovie
92. September 14, 2007, Your opinion should count on incineration

93. September 13, 2007, Clarington deserve apology, says Oshawa councillor – Chairman stands by his comments: the process doesn't change. By Jennifer Stone
94. September 12, 2007, Clarington has no say on incinerator, says regional chairman. By Jennifer Stone
95. September 06, 2007, Don't leap at sites or chosen technology based on price, say consultants - Clarington opts to delay comments on EFW to Region for a week.
96. August 31, 2007, 'No surprises' in peer review to date, says mayor – Studies on possible incinerator ongoing, he says. By Jennifer Stone
97. August 28, 2007, Peer review raises concerns, says garbage incinerator opponent - Study to be presented to council Tuesday evening
98. August 21, 2007, Incinerator peer review expected Sept. 4 – Just wait and see, says councillor. By Jennifer Stone
99. August 15, 2007, Respectful communication key to message - Sometimes the message is lost in the method. By Jennifer Stone
100. July 24, 2007, Councillor confident with proposed incinerator - European energy-from-waste tour sheds light on facilities. By Erin Hatfield
101. July 20, 2007, Trash trip worth the price - Proper decision requires knowledge base
102. July 13, 2007, Councillors return from Euro-trash tour with loads of information - Health officials told them no concern with modern plants: Mayor. By Jennifer Stone
103. July 06, 2007, Europe ripe with energy-from-waste learning - Peterborough considers sending waste here. By Erin Hatfield
104. July 02, 2007, Residents push for more waste information - Region promises it once site selected. By Erin Hatfield
105. June 21, 2007, York reduces commitment to incinerator. By Jennifer Stone
106. June 20, 2007, It changes everything and it changes nothing' - York backs down on incineration commitment. By Jennifer Stone
107. June 20, 2007, Single issue proving divisive for Clarington Council

108. June 19, 2007, Incineration a burning topic in Oshawa – Councillor says City not a willing host for toxic air. By Jillian Follert
109. June 15, 2007, Oshawa councillor urges Clarington not to host incinerator By Jillian Follert and Jennifer Stone
110. June 06, 2007, Council divide must be bridged - Locals vs. Regionals could mean no work gets done. By Jennifer Stone
111. June 04, 2007, Hot topic of incineration burns on as foes battle it out. By Jennifer Stone
112. June 1, 2007, Mayor apologizes for local councillors' 'inexcusable behaviour'. By Jennifer Stone
113. May 31, 2007, Residents continue to fight incineration. By Erin Hatfield
114. May 30, 2007, Delegations speak out against incineration. By Jennifer Stone
115. May 30, 2007, Region won't give Clarington blank cheque for incineration studies. By Jennifer Stone and Erin Hatfield
116. May 30, 2007, East Gwillimbury says 'No' to incinerator - Four other possible sites reside in Clarington
117. May 29, 2007, County wonders where to send its waste. By Vince Versace
118. May 23, 2007, Between the two sides lies the truth - Hot topic burns on. By Jennifer Stone
119. May 22, 2007, Making way for water plant expansion . By Kristen Calis
120. May 18, 2007, Residents ask Region to dump incinerator plans. By Erin Hatfield
121. May 18, 2007, Mayor visits Florida incinerator – Abernathy pays his own way to check out new technology. By Jennifer Stone
122. May 10, 2007, The devil burns: ant-incineration speakers say. By Erin Hatfield
123. May 03, 2007, Forum guest to present anti-incineration view – CAW still hopes to secure pro speaker. By Erin Hatfield
124. April 27, 2007, A tale of waste management

125. April 21, 2007, Council accepts energy-from-waste business model. By Erin Hatfield
126. April 13, 2007, Residents pour out to waste meeting. By Erin Hatfield
127. April 11, 2007, Latest burning issue warrants some attention – Clarington very likely to be home to incinerator. By Jennifer Stone
128. April 04, 2007, Incineration process moving right along
129. April 01, 2007, Premier shouldn't fast-track incineration option. By Ian McMillan
130. March 14, 2007, Too soon to say if Clarington first choice for Durham-York incinerator. By Jennifer Stone
131. November 07, 2006, Energy from waste a topic across the province. By Erin Hatfield
132. October 31, 2006, Alternative waste solutions, getting best 'bang for buck' on top of regional candidates list. By Jeff Hayward
133. September 18, 2006, Waste facility site search begins. By Erin Hatfield
134. September 08, 2006, Port Hope explores host site possibilities for Durham and York Region trash – Wesleyville site fits the waste treatment facility criteria. By Jeanne Beneteau
135. September 06, 2006, We need to hurry up on waste plans
136. September 01, 2006, Plan in place to stop garbage going over the border. By Erin Hatfield
137. August 09, 2006, Waste words way over the top
138. July 28, 2006, The other side of the incineration equation – While some raise questions, others defend technology. By Erin Hatfield
139. July 27, 2006, Federal-provincial funding imbalance- Funding shortfall in Durham estimated at \$50 million annually as a result of federal transfer system, provincial minister says. By Derek Giberson
140. July 21, 2006, Lessons learned – Government policy
141. July 21, 2006, The need for direction – Durham on its own when it comes to waste management policy. By Erin Hatfield
142. July 13, 2006, Durham catching up on organic waste collection

143. July 07, 2006, A burning issue – What is energy from waste? By Erin Hatfield
144. June 22, 2006, Durham OK's thermal waste treatment system - But Region 'a long ways away' from actual building of facility. By Erin Hatfield
145. June 20, 2006 - New bylaw carries littering fines - We can't live in a 'public trash can,' councillor says. By David Blumenfeld
146. May 26, 2006, Durham gets an education in technology - Waste management trip delivers 'good, technical information'. By Erin Hatfield
147. May 26, 2006 - European garbage trip should not be trashed
148. May 25, 2006, Valuable or a waste? Committee debates Region's European trip Finance members want to know where approvals came from. By Crystal Crimi
149. May 24, 2006, European trip far from a waste
150. May 12, 2006, Ajax gets a green bin education - Region continues awareness campaign of new system. By Keith Gilligan
151. May 05, 2006, Taking responsibility for our mounting waste - It's up to Durham to make sure it's done right
152. April 27, 2006, Uxbridge in brief - More police officers promised  
February 13, 2006, Make sure you're heard on energy solution
153. February 02, 2006, We need new trash solutions now
154. November 29, 2005, GTA leaders frustrated with provincial action on waste. By Carly Foster
155. November 17, 2005, Brock considered for short-term waste solution - Committee looks north over southern garbage threat. By Crystal Crimi
156. September 03, 2005, Development charges set to increase -Sewage component to rise more than 25 per cent on commercial side by 2006. By Mike Ruta
157. August 11, 2005, Durham to study garbage options - Public input on method, location sought. By Keith Gilligan Staff Writer
158. May 24, 2005, We need a garbage plan - Landfill crisis looms larger
159. May 21, 2005, Garbage crisis if border closes - More landfills, business recycling needed. By Carly Foster

160. Smith, Jordan Michael (2007). Trash issue in 905 set to catch fire. Toronto Sun: October 29, 2007.

## References - Other Media Articles

161. October 23, 2007, TORONTO STAR - Vaughan councillors say Environment Ministry must reject expansion. By Phinjo Gombu
162. Oct 08, 2007, TORONTO STAR - Clarington residents blast bid for 'monster' trash incinerator. By Carola Vyhnak
163. October 5, 2007, CBC NEWS - Proposed Durham incinerator draws fire at public meetings.
164. Oct 4 2007, THE GLOBE AND MAIL - Sarnia's emissions affecting health, study says. By Martin Mittelstaedt
165. October 4, 2007, THE GLOBE & MAIL - Western Beaches Tunnel Project - City to sue over sewage woes. By JEFF GRAY
166. Sep 25, 2007, NORTH YORK REGION.COM NEWS - Committee backs Clarington incinerator site. By Serena Willoughby
167. Sep 22, 2007, YORK REGION NEWS / YORK REGION.COM - York off hook for incinerator.
168. Aug 15, 2007, YORK REGION NEWS / YORK REGION.COM - Incinerator study may be trash. By Serena Willoughby
169. Jul 30, 2007, TORONTO STAR - Garbage's burning question - As Toronto finds distant holes for its waste, the 905 sees *incineration* in a new, appealing light.
170. Jun 13, 2007, TORONTO STAR - York cuts back on Durham incinerator commitment - Look at other options, councillors say, as facility will now cost \$50 million more.
171. TOXIC ALERT - Incineration - A Poisonous Technology and a Hoax. By Jonathan Campbell, Health Consultant
172. August 3-9, 1997, Beacon Community Newspapers - Incineration - Poisoning Our Neighbours.
173. May 31, 2007, TORONTO STAR - York, Durham burn on both sides of *incineration* issue.
174. April 14, 2007, TORONTO STAR - No safe level for dioxins, furans. By Cameron Smith

## References - Letters to the Editor

175. October 21, 2007, METROLAND / THIS WEEK - Over-packaging needs to be addressed. By Izabela Jaroszynski
176. October 16, 2007, METROLAND / THIS WEEK - Consider the benefits of energy from waste. By Rob Watt, Clarington
177. October 15, 2007, METROLAND / THIS WEEK - We must do better at diversion. By Aubrey Kassirer, Bowmanville
178. October 11, 2007, TORONTO STAR - Calling politicians to account. By Edward P. Swynar
179. October 5/07, QUESTIONING EDITS MADE BY DR. LESBIA SMITH to her August 20/07 - Energy from Waste Facility in the Region of Durham – Précis. By Kerry Meydam, Courtice
180. October 01, 2007, METROLAND / THIS WEEK - Too many schools too close to preferred site. By Kristin McKinnon-Rutherford, Courtice
181. October 1, 2007, Letter to York Region Mayors And Councillors. By Ed Candolini for Communities First
182. September 24, 2007, METROLAND / THIS WEEK - Waste solution not easy. Bruce Rutherford, Clarington
183. September 14, 2007, METROLAND / THIS WEEK -Incineration not best solution to garbage problem. By Daniel Reiff, Uxbridge
184. September 11, 2007, To the Councillors of the Municipality Of Clarington. By Kristin D. McKinnon-Rutherford, Courtice
185. September 10, 2007, METROLAND / THIS WEEK - Incinerator is nothing but bad news. By Judy Cooper, Bowmanville
186. August 02, 2007, METROLAND / THIS WEEK - Incineration location a concern. By Doug Woods, Bowmanville
187. July 27, 2007, METROLAND / THIS WEEK - Let's look at all waste alternatives. By Ed Hosmar, Oshawa
188. July 24, 2007, METROLAND / THIS WEEK - We need to do better at recycling. By Helen Campbell, Enniskillen
189. July 21, 2007, YORK REGION NEWS - York can do better than 65% waste diversion. By Jack Campbell, Schomberg



190. July 14, 2007, YORK REGION NEWS - Incineration information only goes one way. By Mike and Renee Wright, Communities First, East Gwillimbury
191. July 11, 2007, YORK REGION NEWS - Trash initiatives mean less burning needed. By Bill Fisch, York Region Chairperson, CEO
192. July 2007, GREAT LAKES NEWS - Incineration Plans Going up in Flames. By John Jackson
193. June 2, 2007, METROLAND / THIS WEEK - Proud Of Our Local Councillors. By Jim Richards, Orono
194. June 19, 2007, METROLAND / THIS WEEK - Region should lead the way on recycling measures. Ron Dancey, Oshawa
195. June 19, 2007, METROLAND / THIS WEEK - Local councillors deserve credit. By Jim Richards, Orono
196. June 13, 2007, METROLAND / THIS WEEK - Incineration poses many problems. Kathi Bracken, Oshawa
197. June 13, 2007, METROLAND / THIS WEEK - We need answers on energy from waste. By Marion Manders, Kendal
198. May 31, 2007, METROLAND / THIS WEEK - Let's not incinerate. By Jeremy John Wilsdon, Newcastle
199. May 14, 2007, METROLAND / THIS WEEK - Let's really put incinerator under investigation. By Pat Irwin Lycett, Orono
200. May 11, 2007, METROLAND / THIS WEEK - We must speak up against incineration. By Lynda Aiken, Bowmanville
201. May 03, 2007, METROLAND / THIS WEEK - Region has little alternative to incineration. By Bernie Gotham , Oshawa
202. March 19, 2007, METROLAND / THIS WEEK - Put incinerator in Wesleyville. Russ Horner, Whitby
203. November 13, 2006 , METROLAND / THIS WEEK - Incineration is not the answer. By Wendy Cartwright , Sunderland
204. July 10, 2006, METROLAND / THIS WEEK - New waste ideas welcome. Frank Duguay , Brooklin
205. July 07, 2006, METROLAND / THIS WEEK - Waste from energy means more air pollution: reader. Sherry Brown, Ajax

- 206. Thu August 18, 2005, METROLAND / THIS WEEK - Industry must step up in waste management. Al Williams, Ajax
- 207. York-Simcoe Naturalists - Re: York Durham Residual Waste Study
- 208. April 4, 2007, THE RECORD (Kitchener, ON) - Waste incinerators not the answer to garbage problem. By John Jackson
- 209. April 04, 2007, HAMILTON SPECTATOR - Costly incineration is not the answer. By Enver Domingo, Oakville
- 211. Durham Environment Watch, <http://www.durhamenvironmentwatch.org>

### **References - Late Add-Ons**

- 212. Canadian Arctic Resources Committee, Canadian Environment Law Association, David Suzuki Foundation & World Wildlife Federation (undated). The Stockholm Convention.
- 213. Carter-Whitney, Maureen (2007). Ontario's Waste Management Challenge – Is Incineration an Option? Canadian Institute for Environmental Law and Policy.
- 214. CHTO / CTV news (2007). Interview with Durham Region Chair, Roger Anderson. Aired on television news October 3 or 4, 2007.
- 215. Clarington Watchdog (2007). The Mayor is Puzzled? [www.claringtonwatchdog.blogspot.com](http://www.claringtonwatchdog.blogspot.com).
- 216. Clarington, Municipality of (2007). Terms of Reference: Green Community Advisory Committee. Approved by Council Resolution # C274-07.
- 217. Durham, Region of (1999). Region of Durham Long-Term Waste Management Strategy Plan: 2000 to 2020. Prepared by the Region of Durham Works Department, Waste Management Services. Distributed at public information meeting on October 9, 2007.
- 218. Durham, Region of (2007). Out of the Blue Box. Clarington This Week (advertisement): Friday, October 19, 2007.
- 219. Durham, Region of (2007). Public information session re: Energy From Waste, October 9, 2007, 7 to 10 p.m. Held at: Faith United Church.
- 220. Durham, Region of and York Region (2007). Residual Waste Study Frequently Asked Questions. Distributed at public information meeting on October 9, 2007.

221. Durham, Region of and York Region (2007). Residual Waste Study Time Line. Distributed at public information meeting on October 9, 2007.
222. French Group of Scientific Experts (October 2007). French report published on the benefits of waste incineration alternatives.
223. Green Community Advisory Committee Meeting, September 18, 2007.
224. Halifax, Regional Municipality of (2007). Householders Guide to Waste Management – What Goes Where. [www.halifax.ca/wrms/](http://www.halifax.ca/wrms/).
225. Institute for Local Self-Reliance (2006). Waste to Wealth Program 2006 Activities.
226. Kawartha Lakes, City of (2007). Garbage and Recycling Collection Program – For Commercial Establishments. [www.city.kawarthalakes.on.ca](http://www.city.kawarthalakes.on.ca).
227. Kawartha Lakes, City of (2007). Garbage and Recycling Collection Program – For Residential Property. [www.city.kawarthalakes.on.ca](http://www.city.kawarthalakes.on.ca).
228. Markham, Town of (2007). Markham Participates in Anti-Litter Town-wide 20-minute Makeover April 20. [www.markham.ca](http://www.markham.ca).
229. Markham, Town of (2007). Recycling Depots – What can be Recycled. [www.markham.ca](http://www.markham.ca).
230. Markham, Town of (2007). What can be recycled – Don't let any get away! [www.markham.ca](http://www.markham.ca).
231. Northumberland, County of (2007). Recycle Clean program. [www.northumberlandcounty.ca](http://www.northumberlandcounty.ca).
232. Northumberland, County of (2007). Recycling & Waste. [www.northumberlandcounty.ca](http://www.northumberlandcounty.ca).
233. Peterborough, County of (2007). Accepted Blue Box Materials. [www.county.peterborough.on.ca](http://www.county.peterborough.on.ca).
234. Peterborough, County of (2007). Businesses. [www.county.peterborough.on.ca](http://www.county.peterborough.on.ca).
235. Peterborough, County of (2007). Cardboard and Boxboard Materials. [www.county.peterborough.on.ca](http://www.county.peterborough.on.ca).
236. Toronto, City of (2007). Toronto Recycles. [www.toronto.ca/recycle](http://www.toronto.ca/recycle).

237. Toronto, City of (2007). Yellow Bag Program – Commercial Collection. [www.toronto.ca/recycle](http://www.toronto.ca/recycle).
238. Sweden, Government of (2003). Environmental Protection Agency. As reported in the Telegraph.co.ca: 01/03/2003.
239. Peterborough, County of (2007). Waste Management for Business. [www.county.peterborough.on.ca](http://www.county.peterborough.on.ca).
240. Global Cool (2007, Oct. 15). Londoners Lead Sustainable Future. [www.globalcool.org](http://www.globalcool.org).
241. Sweden, Government of (2001). The Swedish Environmental Code - A Resume of the Text of the Code and Related Ordinances (Ministry of the Environment).
242. O'Meara, Jennifer (2007). County could bid for incinerator waste. Northumberland News.com: Wed October 31, 2007.
243. Clarington, Municipality of (2007). Motion regarding incinerator.
244. Lem, Sharon (2007). It's in the bag – Halton hopes to extend life of landfill with new program to promote recycling. Sun Media: November 5, 2007.
245. Marketplace (2007). Batteries can be full of nasty stuff. The good news is they're recyclable. The bad news is everybody just throws them in the garbage. CBC TV (television show): October 31, 2007. [www.cbc.ca/marketplace/](http://www.cbc.ca/marketplace/)
246. World Bank, The (2000). Municipal Solid Waste Incineration – A Decision Maker's Guide. By T. Rand, J. Haukohl & U. Marxen, document 21091.
247. Pickering, Town of (2007). Sustainability in Pickering. [www.sustainablepickering.com](http://www.sustainablepickering.com).
248. Canadian Council of Ministers of the Environment (2007). About CCME. [www.ccme.ca/about](http://www.ccme.ca/about).
249. Durham, Region of (2007). Overview of Durham Region. [www.region.durham.on.ca](http://www.region.durham.on.ca).
250. Ajax, Town of (2007). Environmental Advisory Committee. [www.townofajax.com](http://www.townofajax.com)
251. Oshawa, City of (2007). Report to Community Services Committee from Stan Betoia, Commissioner re: 2007 Smog Committee: May 2, 2007.

252. Oshawa, City of (2007). A Green and Sustainable Future. Inside Oshawa: 2007, 5<sup>th</sup> edition.
253. Scugog, Township of (2007). Clerk's Office: The Planning Process. [www.township.scugog.on.ca](http://www.township.scugog.on.ca)
254. Durham, Region of (2007). Council Highlights. Volume 5, Issue 5. [www.region.durham.on.ca](http://www.region.durham.on.ca).
255. Whitby, Town of (2007). Introductory Discussion Paper: Vision 20131. Town of Whitby Planning Department: June 2007.
256. European Union, Council of (2007). Proposal for a Directive for the European Parliament and of the Council on waste – Recitals. 30 August 2007.
257. European Union, Council of (2007). Communication from the Commission to the Council, the European Parliament and the European Economic and Social Committee on the implementation of the Community Strategy for dioxins, furans and polychlorinated biphenyls – second progress report. 13 July 2007.
258. European Union, Council of (2007). Common position adopted by the Council with a view to the adoption of a Directive of the European Parliament and of the Council on the incineration of waste.
259. Executive Resource Group (2001). Managing the Environment: A Review of Best Practices (Executive Summary). Prepared for the Government of Ontario: January 2001.
260. Frontier Centre for Public Policy, The (1998). Trash In, Trash Out – Saskatchewan Shows Better Way on Recycling.
261. Canadian Plastics Industry Association (2006). Recyclable Materials – Blue Box Programs & Life Cycle of Blue Box Materials.
262. Recycling Council of Ontario (RCO) (undated). Measuring Energy Savings and Greenhouse Gas (GHG) Emission Reductions Benefits Resulting from Recycling.
263. Environment and Plastics Industry Council (2004). A Review of the Options for the Thermal Treatment of Plastics.
264. Environment and Plastics Industry Council (undated). SPI Plastic Container Coding System.
265. Environment and Plastics Industry Council (undated). Polystyrene.

266. PlasticsResource.com (2007). Information on Plastics and the Environment - Recycled Plastic Markets Database. [www.plasticsresource.com](http://www.plasticsresource.com)
267. Canadian Council of Ministers of the Environment (2001). Canada-wide Standards for Dioxins and Furans.
268. Canadian Polystyrene Recycling Association (2007). Our programs: Municipal Curbside Recycling, Food Service Recycling, Recycling for the Horticultural Industry, Industrial & Commercial. [www.cpra-canada.com/programs.htm](http://www.cpra-canada.com/programs.htm)
269. Nova Scotia, Province of / Nova Scotia Environment and Labour (2004). Status Report 2004 of Solid Waste-Resource Management in Nova Scotia: Nova Scotia, A World Leader in Recycling.
270. New Zealand, Government of / Ministry for the Environment (2005). Waste Management in New Zealand: A Decade of Progress.
271. Plastics Resource.com (2007). Recycled Plastic Markets Database – Buyers of Polyethylene Terephthalate (PET). [www.plasticsresource.com](http://www.plasticsresource.com).
272. Indy Media (2006). Massive Victory for anti-incinerator campaign in Nottingham, etc. [www.indymedia.org](http://www.indymedia.org).
273. Pollution Probe Foundation, The (1989). The Canadian Green Consumer Guide – How You Can Help (Responsible shopping that won't cost the earth). McClelland & Stewart Inc.: Toronto, Ontario.
274. Greater Toronto Marketing Alliance (2007). Population Forecast and Growth Rate. [www.greatertoronto.org](http://www.greatertoronto.org).
275. Regions of York / Durham (2007). Public information pamphlet / Q & A handed out at the November 10, 2007 'Durham Region Waste Fair.'
276. Black, Debra & Gillespie, Kerry (2007). Premier to strike panel to study potentially carcinogenic chemical found in plastics. Toronto Star: November 21, 2007.
277. Stone, Jennifer (2007). Doctors raise concerns about incinerator. The Canadian Statesman: November 21, 2007.
278. Stone Jennifer (2007). I'll trust the doctors with my health, thanks. The Canadian Statesman: November 21, 2007.

279. Sweden, Government of (2007). Implementation of the EU Sustainable Development Strategy – Sweden's report to the European Commission, June 2007.
280. Swedish Association of Waste Management RVF 1998-2005, Svensk avfallshantering 1998 – 2005.

## ENDNOTES

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<sup>1</sup> 4

<sup>2</sup> References 77 to 161.

<sup>3</sup> 82

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<sup>33</sup> 13,34

<sup>34</sup> 35,47,13,34

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<sup>38</sup> 35,47,34

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