

**The Case against Incineration**  
**Ten reasons to say NO to the TEST**  
**Incinerator**

**GREENPEACE**

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# The Case against Incineration

## Ten reasons to say NO to the TEST Incinerator

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# The Case against Incineration

## Ten reasons to say NO to the TEST Incinerator

### 1. Executive Summary

This briefing sets out why the decision to allow the construction and commissioning of a waste incinerator in Tasmania should be reversed and instead a policy framework, which aims towards Clean Production and Zero Waste, should be implemented.

#### 1. The volume of ash produced by the incinerator is grossly underestimated

There is no explicit calculation of projected ash generation from the incinerator in any of the publicly available documents, including Test Energy's Development Proposal & Environmental Management Plan (development proposal) and the Department of Primary Industry, Water and Environment's (the department) Environmental Impact Assessment.

In the absence of any supporting data inputs and calculations, the department states that the incinerator will produce a mere 18 tonnes of highly contaminated fly-ash and residues a year.

Test Energy does provide a "block diagram" which shows ash generation figures relative to the amount of waste entering the incinerator complex, with no supporting calculations. When the data in the block diagram are explicitly calculated the total ash generation is 19,000 tonnes per year, with 3,000 tonnes of this being highly toxic fly ash and residue. This is over 150 times more than the department's estimation. [verified by EnviroTest, Dr Miller, G: [Re: Ash Calculations for Proposed Brighton incinerator - Total Energy Services Tasmania Pty Ltd.](#)]

#### 2. Incineration cannot virtually eliminate landfill

- Because of the need to dispose of thousands of tonnes of toxic waste ash every year, incineration will never eliminate landfill.
- The Test Energy incinerator does not propose to deal with all of Tasmania's waste - 60% of Southern Tasmania's municipal waste and 37% of all of Tasmania's industrial waste would *not* be diverted from landfill.
- Incinerators will not remove the responsibility and costs from councils of maintaining current landfill sites.

#### 3. The incinerator may burn hazardous substances

Hazardous substances could find their way into the Test Energy incinerator through various waste streams including;

- Industrial waste [which will now make up 70% of the feed stock waste supply]
- Plastics in household and industrial waste
- Sewage sludge – which contains industrial contaminants

#### 4. Incinerators overseas have breached international dioxin standards

The Test Energy incinerator will use Segher technology. Seghers incinerators in the USA and Belgium have had serious emission and safety problems, causing some incinerators to be shut down.

The Seghers incinerator in Davis County USA that Test Energy refer to in the development proposal has failed stack emission tests for dioxin for five consecutive years and has been fined over a million US dollars for breach of environmental permits causing air pollution [Rogers, R., *Davis burn plant is fined \$1,098,954* Deseret News]

A ‘state-of-the-art’ Seghers incinerator in Belgium referred to by Test Energy in their development proposal breached dioxin emission standards by 1,300 times in August last year, and has been closed down. Reports said that a 12 kilometre zone was contaminated, including schools and residential housing.

Two Belgian scientists have re-assessed the dioxin emissions from the Seghers Belgian incinerators in Ghent and Wilrijk, which again Test Energy refer to in the development proposal, showing that these incinerators have greater emissions than reported. The study also shows that single point sampling for dioxins, rather than continuous sampling, can **underestimate the actual dioxin emissions sent into the atmosphere by 30 to 50 times.**

#### **5. No independent health risk assessment was undertaken.**

The predicted health impacts of Test Energy’s proposal are based upon a “multi-path health risk assessment (air, soil, food, water) for a waste to energy plant in Western Australia”. Originally prepared by Global Olivine, this health risk assessment was based largely on the operation of two Global Olivine municipal waste incinerators in Washington USA, and Nova Scotia, Canada.

Video evidence held by Greenpeace shows serious operational problems with both of those incinerators. The Canadian plant has been criticised by workers and community and showed dangerous operational procedures. The USA plant is visibly falling to pieces, failed its pollution limits, was illegally dumping its toxic ash, and as a consequence was shut down. The site is now needs to be decontaminated.

This information raises the question of whether it is acceptable for Test Energy to rely on this health risk assessment for the Tasmanian incinerator.

It has been reported that Kwinana council is no longer in negotiations with the Global Olivine proposal in WA after the planning approval for the incinerator expired. The council has made a long term commitment to using the Southern Metropolitan Regional Council Resource Recovery Centre.

#### **6. Incineration is not clean energy, and if petrochemical products are burnt the energy is not legally “renewable”**

Test Energy presents the burning of waste and plastics as having positive environmental outcomes in terms of energy recovery. However there are flaws in this approach;

1) Test Energy are required by their permit to ensure recyclable materials are recycled. The “resource recovery” scenario is used by Test Energy as to claim the incinerator is an environmentally friendly and green option for Tasmania. Burning materials does not further this objective.

2) Test Energy are prevented by law from claiming renewable energy credits for any electricity created from fossil fuel based products. Plastics are derived from fossil fuels, which are the main source of the greenhouse gas, carbon dioxide.

3) Burning products can recover some of the calorific value of a product, however the energy used to make the product is wasted. This uses finite resources in a linear way rather than re-using materials and creates an additional environmental burden. New raw materials must be extracted, energy used to transport and manufacture the new products. These processes will also create toxic pollution in transport and manufacturing processes.

Materials such as paper and wood should be recycled and re-used. Recycling paper in a modern mill uses 3-7 times less energy than a primary paper mill and costs 35% less to produce a paper product. Recycling plastics saves 3.7 to 5.2 times more energy and recycling metal saves 30 to 888 times more energy than is gained through incineration.

## **7. Incineration could prevent employment and business opportunities in resource recovery in Tasmania**

It is expected that the incinerator plant itself will be highly mechanised and automated, and require a reasonably low level of staffing compared with employment in current waste management techniques. There will be employment opportunities in the “front end” recycling and sorting plants. However these jobs will be provided by those recovery and recycling businesses that may join the project should it proceed, rather than Test Energy.

Employment and business opportunities in resource recovery can occur without an incinerator. Indeed, it is probable that jobs and small business opportunities will be lost in the Hobart region if the incinerator is built. Injecting more infrastructure into re-use and recycling, instead of incineration, will lead to more jobs in this sector. Reports show that recycling can produce up to ten times as many jobs as incinerators, given the same amount of waste

## **8. Incineration is expensive**

The economics of incineration do not stand up to scrutiny. Incinerators are formidably expensive. Local authorities that invest in incinerators often find they have less money to invest in more sustainable forms of waste management, such as reuse and recycling. Incinerators rely on the continued generation of waste to support their high building and operating costs.

Aside from the huge capital costs, many incinerators are plagued by unexpected maintenance costs, explosions and unanticipated down-time, an extra cost burden on local economies. Incineration does not generate as many jobs in local communities as waste reuse, recycling and composting schemes do. In addition, the human costs of damaged health and the environment are impossible to measure.

## **9. Is the incinerator a viable proposal?**

Recent media statements (Mercury, 8 March 2003) by Test Energy’s Managing Director, that the plant may need to be halved in size due to inability to gain sufficient waste contracts, calls into question the viability of the proposed incinerator business. Test Energy said in publicly available papers that the plant requires 120,000 tonnes of waste to be viable.

Halving of the size of the proposal indicates a capacity of 90,000 tonnes of waste per annum. Although a smaller plant will reduce the initial capital outlay, halving the size of the plant does not necessarily halve the cost of the plant, because the expensive pollution control equipment and infrastructure will still be required.

## **10. There are non-incineration solutions underway in Australia and around the world which divert up to 85% of waste away from landfill and create hundreds of jobs**

A new Greenpeace report shows that “state of the art” waste management is possible, based on available technology, without the use of incineration. The methodology is based on maximum source separation of waste for re-use and recycling, then a further screening of residual waste to remove recyclables and hazardous elements of waste. Green waste and organic matter are also removed and processed into garden mulch, compost and methane recovery.

This approach of harvesting the valuable resources in the waste stream can divert 80% or more waste from landfill. It also provides significant economic benefits such as job creation and creating new business opportunities. It’s an approach that’s working in Canberra, New Zealand and Canada.

## 2. Introduction

This briefing sets out why the decision to allow the construction and commissioning of a waste incinerator in Tasmania should be reversed and instead a policy framework, which aims towards Clean Production and Zero Waste, should be implemented.

A municipal and industrial waste incinerator is not in the interests of the island State of Tasmania, nor for mainland Australia. Other waste management techniques have far greater benefits for public health, Australia's international image, the economy and environment. Australia is now at a decision-making crossroads for how to manage waste in a manner that is compatible with and progresses sustainability. Making a choice for incineration of waste does not lead to a healthy and sustainable future.

Incinerators produce a huge array of chemicals from their smokestacks and in the solid ash waste stream. The main contaminants of concern are dioxins and furans (dioxins). Dioxins are the most toxic substances known to science and cause a vast array of health effects. Dioxins impact humans and animals on a cellular level interfering with the endocrine (hormone) system. The World Health Organisation has classed the most toxic dioxin as a known cancer-causing chemical. Other health effects include birth defects, diabetes, interruption of the immune system, reproductive disorders, and reduced learning ability in children. There is no proven safe dose of dioxins.

Dioxins are invisible poisons. Because dioxins build up in fatty tissue we are exposed to them in foods such as meat, milk, cheese and butter. Dioxins are very stable and bio-accumulate through the food chain. Because dioxins are fat soluble, we cannot easily rid our bodies of them. Unfortunately, because of these characteristics mothers can pass dioxins on to their babies through breast-feeding, and while the child is in the womb.<sup>1</sup>

There is such high concern about dioxins that in May 2001, over 100 nations, including Australia came together and signed an international treaty called the Stockholm Convention, which has the ultimate aim of eliminating dioxins. Incineration is recognised in the Stockholm Convention as a major potential source of dioxins.

Advocates of incineration argue that incineration solves the environmental problems associated with past and current landfill practices, particularly the production of methane (a significant greenhouse gas) and toxic leachate. However, these problems are largely caused by putrescible waste (wastes that decompose). It is ironic that while rotting organic matter is the main cause of problems in landfills (and around 50% of household waste), our soils are in desperate need of organic matter and nutrients. In Australia, 80% of soils have less than 1% organic matter.<sup>2</sup>

Only the bare minimum of treated and stabilised residual waste should go into landfill. Organic waste should be composted or treated (using either aerobic or anaerobic methods); paper, plastics, glass and metals should be recycled. Anything that cannot be composted, reused or recycled must be stabilised before being landfilled. However, landfill should only be seen as an interim solution, while society moves toward designing waste out of our production and consumer systems.

The other main argument used by incinerator advocates is that incineration captures the energy in the waste to generate electricity. In fact, burning discarded products and material is an enormous waste of energy. Firstly, only a portion of the calorific value of the material can be captured by incineration. Secondly, the energy used to make the product ("embedded" energy) is wasted. For example, the energy used to extract raw materials, the transportation of the materials from extraction to consumption and in the production processes is all wasted if the product is destroyed.

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<sup>1</sup> WHO recommends women continue to breast feed their children.

<sup>2</sup> Gerard Gillespie, Biocycle (Feb 02)

It is a furphy to call electricity generated by municipal and industrial waste incineration “clean” energy. If any products derived from fossil fuels, such as plastics, are burned it cannot be classed as renewable energy by law. Even if some energy can be called “renewable” legally, it is certainly not green or clean energy, because of the toxic pollution created by incineration.

Finally, Incineration is an environmentally polluting industry. There are better solutions, which will allow Tasmania and Australia to move toward a sustainable future.

### **3. Background of incinerator proposal**

Total Energy Services Tasmania Pty Ltd (Test Energy) lodged a Development Proposal and Environmental Management Plan (the development proposal) to construct an incinerator in Brighton to process 180,000 tonnes of waste per annum. The proposal was advertised on 3 December 2000. The representation period closed on or about 10 January.

The development proposal was referred to the Tasmanian Department of Primary Industry, Water and Environment (the department) by Brighton Council. After considering the proposal and objections, and obtaining additional information from Test Energy the department released an Environmental Assessment Report together with an Environmental Permit in April 2001. Several parties appealed against the granting of the environmental permit. These issues were resolved and the permit was finally granted in July 2001.

Test Energy also applied for, and was granted, a Development Permit from Brighton Council to enable Test Energy to construct and operate the plant at 60 Crooked Billet Drive, Bridgewater in the municipality of Brighton.

Greenpeace was not involved in the planning process, however has stated its opposition to the incinerator based on environmental grounds since at least May 2001.

This report sets out why Greenpeace is opposed to incineration and reveals new information that challenges the claim that the incinerator is clean and green.

## **4.0 Ten reasons to say no to the Tasmanian Incinerator**

The following case against incineration is specifically in response to the Test Energy proposal, although some information is applicable to incineration generally.

### **4.1 The volume of ash produced by the incinerator is grossly underestimated**

There has been an underestimation of the quantities of ash that will be generated by the Test Energy incinerator. Disturbingly there is no explicit calculation of projected ash generation from the incinerator in any of the publicly available documents, including the development proposal and the Environmental Impact Assessment.

There are references in the public documents stating that incineration reduces the volume of waste by 90 – 95%, and that about 1% of the ash stream would be contaminated. There is also a “block diagram” which shows ash generation figures relative to the amount of waste entering the incinerator complex<sup>3</sup>. The quantities are in kilograms per hour. However, nowhere has Test Energy or the department

<sup>3</sup> There is no detail in this diagram for how much of the waste entering the complex will be diverted from the combustion chamber for recycling.

undertaken a calculation nor compared the figures to other incinerators overseas. The “block diagram” is not referenced to any source.

Finally, the department states that the incinerator will produce a mere 18 tonnes of highly contaminated ash and residues a year. This is based on an incinerator in Belgium, but no detailed data or calculation is provided to back up this figure.

When the figures in the block diagram are explicitly calculated the total ash generation is 19,000 tonnes per year, with 3,000 tonnes of this being highly toxic fly ash and residue.

The failure to properly quantify waste ash production can be classified into 3 major concerns:

- a) A massive underestimation by the department of highly contaminated fly and residue ash
- b) A failure of Test Energy to provide a calculation and definitive amount of ash generated
- c) An apparent underestimation of ash produced by the plant when compared to the European Union ash figures based on the EU dioxin inventory.

#### **4.1.1 The Environmental Assessment Report does not set out a calculation of the volume of ash produced by the incinerator.**

The only reference in the Department’s report regarding an actual volume of hazardous ash wastes from the Brighton plant is 18 tonnes per annum. The department states that “this amount of waste is not considered to be large and can be easily managed by the state’s approved hazardous waste landfills”<sup>4</sup>.

This figure was derived from performance of the Indaver Beveren plant in Belgium of a slightly larger capacity. No detailed data to back up this finding is provided.

References are made in the Environmental Assessment Report<sup>5</sup> to the reduction of waste by mass by 90%, therefore it could be assumed that there is in fact a total of around 18,000 tonnes of ash waste from the Brighton plant per annum. References are also made to fly-ash and residues making up around 1% of the incoming waste. From this an assumption can be made that there will be at least 1800 tonnes of highly contaminated ash and residue per year.

This is significantly different from the department’s estimate of fly-ash and residue.

#### **4.1.2 Test Energy fail to make any calculation of ash production from the incinerator.**

Nowhere in the development proposal nor the responses provided to the department and the public, is there a calculation or a statement of how much ash will be produced by the incinerator. There is a “block diagram” in the development proposal which sets out waste feed rates in kilograms/hour, and resulting figures of waste ash production in kg/hour<sup>6</sup>.

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<sup>4</sup> Environmental Assessment Report, DPIWE, April 2001, p41.

<sup>5</sup> Ibid, p38

<sup>6</sup> Development Proposal & Environmental Management Plan, Test Energy p 27. An updated block diagram is provided in “Responses to Comments on the Development Proposal and Environmental Management Plan, February 2001 (attached to Environmental Assessment Report), appendix B. The same ash figures apply. *See Appendix 1*



By dividing the feed rate of 22,500 kg/hr into the 180,000 tonne capacity of the plant per annum, the incinerator will operate for a total of 8000 hours, this is supported in appendices to the Environmental Assessment Report<sup>7</sup>.

Using these figures the actual amount of waste ash produced by the plant will be **3000** tonnes per year of toxic fly-ash and 16,000 tonnes per year of bottom-ash, giving a total of 19,000 tonnes per year.<sup>8</sup>:

A calculation from the figures shown in Test Energy’s “block diagram” is as follows:

**Table 1: Ash calculation for Test Energy proposed Brighton incinerator**  
Ash production figures derived from Test Energy development proposal p27

Ash source	kg P/hr	Hours of operation	kg p/ annum	Total Tonnes pa
Flue gas residue	300	8000	2,400,000	2,400
Boiler fly ash to fixation	75	8000	600,000	600
				subtotal <b>3,000</b>
Bottom ash generation	2000	8000	16,000,000	16,000
<b>Totals</b>	<b>2375</b>	<b>8000</b>	<b>19,000,000</b>	<b>19,000</b>

**4.1.3 The actual ash production from the plant may be further underestimated, based on ash production from incinerators in the European Union.**

At the reported waste feed-rate of 22,500 kg/h, the ash values can be used to calculate the following incinerator-related waste generation rates

- Fly ash/scrubber residue: 13.3 kg/tonne of waste burned
- Boiler ash: 3.3 kg/tonne of waste burned
- Bottom ash: 88.9 kg/tonne of waste burned

In contrast, the European Union Dioxin Inventory presents the following incinerator-related waste generation rates<sup>9</sup>:

- Fly ash: 30-38 kg/tonne of waste burned
- Boiler ash: not addressed
- Bottom ash: 300 kg/tonne of waste burned

These under-estimations have serious consequences for Tasmania. Over the projected 20 year life span of the incinerator 60,000 tonnes of highly toxic fly & residue ash will be produced, and 320,000 tonnes of bottom ash. All of this 380,000 tonnes of ash will be contaminated with metals and dioxins.

<sup>7</sup> Responses to Comments on the Development Proposal and Environmental Management Plan, February 2001, p9.  
<sup>8</sup> EnviroTest, Dr Miller,G: Re: Ash Calculations for Proposed Brighton incinerator - Total Energy Services Tasmania Pty Ltd.  
*See Appendix 2.*  
<sup>9</sup> Wenborn, M., King, K., Buckley-Golder, D., Gascon, J., 1999. Releases of Dioxins and Furans to Land and Water in Europe. Final Report. Report produced for Landesumwamt Nordrhein-Westfalen, Germany on behalf of European Commission DG Environment. September 1999. *See Appendix 3*

Although Test Energy intend to find “markets” for this material, there are risks to human health from the release of metals and dioxins into the environment, as well as workers handling these materials. It is therefore possible that the entire ash waste stream will need to be landfilled.

#### 4.2 Incineration will not solve problems with, or eliminate, landfill

Test Energy has indicated in media reports that the incinerator would reduce waste to landfill in Southern Tasmania by between 80 – 99 %. On reviewing the available waste figures and the volume of ash produced, these claims cannot be substantiated.

Test Energy’s managing director stated in November 2002, that 30% of the proposed waste would be municipal or domestic waste, the rest would be from industrial or commercial sources.<sup>10</sup> Using the Tasmanian waste figures provided in the Test Energy development this 30 / 70 percent split would mean that 60% of Southern Tasmania’s municipal waste and 37% of all of Tasmania’s industrial waste would not be diverted from landfill<sup>11</sup>.

In addition the ash generated by the incinerator will need to be landfilled. Although the permit may eventually allow the bottom ash to be re-used (if markets can be found for contaminated ash streams), initially the ash is required to be landfilled.

The volume of ash typically generated by waste incinerators is between 10 – 30 %. Using the Test Energy figures, 19,000 tonnes of ash will need to be landfilled per annum at least initially. In addition, the highly toxic fly ash and pollution residue would total around 3000 tonnes per annum. The highly contaminated ash is required to be “fixed” in a cement slurry prior to being land-filled, therefore occupying more space in landfill than “loose” ash.

Test Energy plan to “market” the bottom ash. However, all incinerator ash is contaminated with heavy metals and dioxins. Figures stated below in table 2 show the variance of ash contamination. It is of great concern that contaminated incinerator ash may be used in such a way that could contaminate the environment, with the associate risk to human health

**Table 2. MSW- Incineration, Heavy Metal Concentrations** (Source: Schmid et al, (2000) p.25

Substances	Contents mg/kg		
	Slags	Fly Ash	Residues from Gas Cleaning
Cadmium (Cd)	<0,5 - 10	50 - 1000	300 - 500
Thalium (Tl)	<2	0 - 50	0 - 2
Mercury (Hg)	<0,05 - 5	2 - 30	10 - 30
Arsenic (As)	0,5 - 50	10 - 100	40 - 100
Cobalt (Co)	15 - 35	30 - 100	5 - 20
Chromium (Cr)	50 - 1000	50 - 2000	50 - 200
Copper (Cu)	500 - 1500	300 - 5000	500 - 1500
Nickel (Ni)	25 - 100	100 - 400	30 - 100
Lead (Pb)	100 - 3500	1000 - 12000	4000 - 10000
Antimony(Sb)	20 - 200	300 - 1000	300 - 1000
Tin (Sn)	100 - 250	500 - 3000	-
Zinc (Zn)	500 - 2500	5000 - 40000	20000 - 30000

The levels of heavy metals in fly ash and gas cleaning residues are very high and therefore hazardous. Slags or bottom ash also have significant levels of heavy metals, which would make it unsuitable to be

<sup>10</sup> Mercury, November 6, 2002.

<sup>11</sup> Calculation provided in Appendix 3

added to soil. Continued application of such material to soil would raise the metal concentrations in the soil to levels in excess of NEPM Ecological Investigation Levels (EILs) and Health Investigation Level “A” over time.<sup>12</sup>

Dioxin levels as illustrated in Table 3 below also indicate that not only is the fly-ash and scrubber residue highly contaminated with dioxin but also that slags or bottom-ash contain dioxin between the range of 4-25 ppt or ng/kg.

**Table 3 MSW- Incineration, typical dioxin and furan concentrations**

Substances	Slags	Fly Ash	Residues from Gas Cleaning
PCDD/F	4 - 25 ngTE/kg	100 - 10000 ngTE/kg	100 - 10000 ngTE/kg

Source: Schmid et al, (2000)<sup>13</sup>

Tasmanian regulators should be very cautious in considering any proposal by Test Energy for any incinerator ash to enter the marketplace as a ‘product’. The Canadian guidelines for a tolerable level of dioxin in soil have been established at 4ppt<sup>14</sup>.

Far from alleviating landfill problems, the incinerator will actually add to the toxic burden in Tasmanian landfills.

### 4.3. The incinerator may burn hazardous materials

A huge range of materials and chemicals can find their way into the waste stream. Almost anything that can be bought may end up in the waste stream, therefore the likelihood of hazardous substances finding their way into the incinerator is high.

A product in itself may not be harmful, but when incinerated the chemicals they are made of are released, and the formation of new chemicals can occur. Studies have shown over 200 chemicals being emitted from incinerator stacks<sup>15</sup>, with human health impacts known on only a handful of them.

Hazardous substances could find their way into the Test Energy incinerator through various waste streams including;

- Industrial waste [which will now make up 70% of the feed stock waste supply]
- Plastics in household and industrial waste
- Sewage sludge – which contains industrial contaminants
- Medical waste

#### Industrial Waste

Industrial waste coming into the Test Energy incinerator could contain:

- computer and electronic scrap, containing brominated plastics which can form dioxin congeners.
- building and demolition waste which may have high levels of PVC or treated timber.

Although the environmental permit requires the removal of materials such as batteries, PVC, lead and treated timber, it is likely that some such material will slip through. Plastics and materials with brominated chemicals in them will form brominated dioxin congeners if burned. These substances have

<sup>12</sup> The persistence of metals in the soil would result in a cumulative impact over time due to additional applications.

<sup>13</sup> Sourced from T. Leclaire: *Behandlung und Verwertung von HMV- Rückständen*, Gerhard Mercator- Universität- GH Duisburg; 1998

<sup>14</sup> PATTLE DELAMORE PARTNERS LTD. *Dioxin Concentrations in Residential Soil*, Paritutu, New Plymouth 2002

<sup>15</sup> *Incineration and Human Health, State of knowledge of the Impacts of Waste Incinerators on Human Health*. Allsop, Costner, Johnston, Greenpeace Research Laboratories, University of Exeter, UK, p79.

been identified as carcinogenic and endocrine disrupting, but products containing brominated substances are not identified to be removed from the waste stream nor are the dioxin congeners monitored. Items such as computer and electronic waste have high levels of metal contaminants in them, particularly lead.

### **Household plastics**

Chlorinated plastics are now commonplace in household waste. The best known of these products is PVC. The fact that PVCs are not supposed to be burned does not mean they won't be. The reality is that many chlorinated plastics are not easy to distinguish from other plastics, making public awareness an onerous job for the industries and councils who commit their waste to incineration.

### **Sewage sludge**

Test Energy has identified 50,000 tonnes of sewage sludge available in Southern Tasmania, however some councils already recycle these wastes to land these quantities may not be available to Test Energy.

The department shows support for burning of industrial waste and sewage sludge. It states in the Environmental Assessment Report "the current alternative to landfill for sludges is application to land, however, this is not possible for some sewage sludge from treatment plants that receive industrial waste water.<sup>16</sup>" They go on to say "combustion is the only viable alternative to landfill and many industries have indicated their interest in this alternative disposal method". It is unclear whether this statement refers to burning industrial waste water or the contaminated sewage sludge. Either way the central issue is that of burning contaminated waste.

Researchers at Cornell University and the American Society of Civil Engineers have conducted a range of studies revealing that sludge typically contains the following toxins:

- *Polychlorinated Biphenyls (PCBs)*;
- *Chlorinated pesticides* -- DDT, dieldrin, aldrin, endrin, chlordane, heptachlor, lindane, mirex, kepone, 2,4,5-T, 2,4-D;
- *Chlorinated compounds* such as dioxins;
- *Polynuclear aromatic hydrocarbons*;
- *Heavy metals* -- arsenic, cadmium, chromium, lead, mercury;
- *Bacteria, viruses, protozoa, parasitic worms, fungi*; and
- *Miscellaneous* -- asbestos, petroleum products, industrial solvents.

The European Union Commission has become increasingly concerned about the transport and fate of environmental contaminants in sewage sludge and has commissioned studies on which to base regulatory action to control these contaminants. Heavy metals have been known to contaminate sewage sludge for many years and knowledge of their impacts is common, however as the author of one such report points out:

"Much less information is available on organic pollutants where some six thousand or more compounds have been identified. Many of these cannot be routinely determined in the majority of laboratories due to lack of appropriate instrumentation, the absence of a unified methodology and expense."<sup>17</sup>

Table 4 below provides an indication of the types of contaminants that currently occur in sewage sludge in the EU. Note the prevalence of polychlorinated materials such as PCB's, Dioxins and Furans.

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<sup>16</sup> Environmental Assessment Report, DPIWE, April 2001, p48.

<sup>17</sup> EU Commission, (2001) Final Report Pollutants in Urban Waste Water and Sewage Sludge Prepared By ICON Consultants London United Kingdom Feb 2001 For Directorate General - Environment

**Table 4: Potentially toxic elements and organic contaminants examined in the review of pollutants in urban wastewater and sewage sludge**

Potentially toxic elements	Organic contaminants
Zinc (Zn)	Linear alkylbenzene sulphonates (LAS)
Copper (Cu)	Nonylphenolethoxylates (NPE)
Nickel (Ni)	Di-(2-ethylhexyl)phthalate (DEHP)
Cadmium (Cd)	Polycyclic aromatic hydrocarbons (PAHs)
Lead (Pb)	Polychlorinated biphenyls (PCBs)
Chromium (Cr) III and VI	Polychlorinated dibenzo-p-dioxins (PCDDs)
Mercury (Hg)	Polychlorinated dibenzo-p-furans (PCDFs)
Other PTEs such as Arsenic, Silver, Molybdenum and Selenium	Platinum group metals (PGMs)
	Nitro musks (chloronitrobenzenes)
	Pharmaceuticals
	Oestrogenic compounds:
	Endogenous forms: 17 $\beta$ -oestradiol, oestrone
	synthetic steroids: ethinyloestradiol
	Polyelectrolytes (polyacrylamide)
	Other organics such as Adsorbable organo halogens (AOX) and chlorinated paraffins

These contaminants entering the incinerator greatly increase the chance of excessive dioxin and heavy metal emissions. It also undermines the intention of removing hazardous materials such as lead, PVC and batteries from the waste stream. If the intention of removing these items from the waste stream is to reduce the contaminants entering the incinerator resulting in lower pollution rates, it is reasonable to conclude that contaminated sewage sludge should likewise be banned from entering the combustion chamber.

### Medical Waste

Although Test Energy are not permitted to incinerate medical waste currently, the company does envisage this being possible in the future, as indicated in the following statement;

"Another benefit of the proposed facility is its ability to dispose of medical waste. Medical waste requires special handling and most hospitals in Tasmania currently lack facilities to incinerate the medical waste they generate on site. The SEGHERS technology plant is environmentally capable of destruction of such waste. However, certain aspects with respect to handling of the waste and combustion temperatures would need to be clarified with the relevant authorities. Medical waste is not included in this proposal at present, but could be considered at a later date, subject to separate permitting. In view of the present undesirable practice of landfill disposal, thermal destruction should be a preferred option."<sup>18</sup>

If Test Energy was to gain a permit to incinerate medical waste it would be a move away from international best practice, which has seen the introduction of alternatives to incineration. Non-incineration, sterilisation technologies are effective and cheaper without the negative impacts of toxic emissions and ash waste produced from incinerators<sup>19</sup>.

<sup>18</sup> Development Proposal and Environmental Management Plan, November 2000, p 36

<sup>19</sup> Concerns with, and alternatives to, medical waste incineration are thoroughly discussed by Health Care Without Harm. [www.hcwh.org](http://www.hcwh.org)

#### 4.4 Incineration technology breaches dioxin pollution laws by thousand of times

In the development proposal, Test Energy list a large range of incinerators by Seghers Bettertechnology™, which is the chosen supplier of Test Energy incinerator technology. Colour images of incinerators in the USA, China and Korea are included in the development proposal, implying that these are reliable plants<sup>20</sup>.

In the Environmental Assessment Report the department states that incinerators are well accepted in Belgium and that Seghers plants are reliable and meet or exceed relevant EU air emission standards<sup>21</sup>. However, some incinerator companies using this Seghers technology in the USA and Belgium have had serious problems with toxic emissions. Communities in those countries have fought to have Seghers incinerators closed down.

##### 4.4.1 Underestimation of dioxins in Belgian incinerators

A study undertaken by two Belgian scientists, re-assessed the dioxin emissions from the Seghers Belgian incinerators in Ghent and Wilrijk, which TEST list in their development proposal. The study shows that incinerators can produce more dioxins than are being reported. This study also shows that single point sampling for dioxins, rather than continuous sampling, can underestimate the actual dioxin emissions sent into the atmosphere by 30 to 50 times<sup>22</sup>.

This study was undertaken in 1998 and should have been referred to by Test Energy as relevant information on these Seghers incinerators for the public to consider.

##### 4.4.2 Seghers Belgian incinerators closed down

A Seghers so called “state of the art” incinerator run by Indaver in Antwerp, Belgium, was closed down in August 2002 because it breached its dioxin limits by an enormous 1300 times. Further testing in January 2003, showed it could not meet emissions targets, and as at February 2003 was still closed down<sup>23</sup>. In accordance with its regulatory permits, the Indaver static kiln is required to monitor its dioxin emissions only once per year. The samples taken in August, 2002 indicated that the static kiln was releasing dioxin at a rate of 130ng TEQ/Nm<sup>3</sup>. This is **1,300 times more than the European standard** of directive 2000/76/EEC and the Flemish standard (0.1ng/m<sup>3</sup>).

An agricultural expert assessed the contamination from the Indaver incident and reported that a 12 kilometre zone had been contaminated. This has serious consequences for the local population, given the long term, subtle and inter-generational health impacts caused by dioxins. In the aftermath of the dioxin incident the Belgian Federal Agency for the Safety of the Food Chain took samples of eggs in two nearby communities Stabroek and Berendrecht. The eggs exceeded the tolerable limit for dioxin content<sup>24</sup> by 120%.

In December 2002 another Seghers incinerator in the city of St Niklaas was ordered to close and to be fined 100,000 Francs each and every time it started the incinerator in breach of the Court Order<sup>25</sup>. Members of the public and groups opposing incineration in Belgium filed the case. The incinerator was closed down by the Court because there was no evidence that there would not be adverse health effects. This use of the precautionary principle is important when dealing with an industry capable of causing significant harm to people, the environment, tourism and trade.

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<sup>20</sup> Seghers recently was declared bankrupt, with its assets being purchased by Singaporean Keppel Corporation. The Seghers has been renamed Segher Keppel Technology Group.

<sup>21</sup> Environmental Assessment Report, DPIWE, April 2001, p 32

<sup>22</sup> De Fre R. and Wevers M. (1998). Underestimation in dioxin inventories. Organohalogen Compounds 36: 17-20.

<sup>23</sup> See appendix 5 for original Belgian Articles and accompanying summary translation.

<sup>24</sup> The Belgian standard is currently 5 pg TEQ/g fat.

<sup>25</sup> See Appendix 4 for summary translation of Court Order and original judgement (in Belgian/Dutch)

#### **4.4.3 Seghers USA incinerator fined over US\$ 1 million**

Test Energy refers to the Seghers incinerator in Davis County USA in the development proposal and supplies a colour impression of the incinerator, implying that the incinerator is to be relied upon in the development proposal. However, this incinerator;

- Has emitted dioxin in tests at a level of 1,100 ng/dscm (ng ITEQ m<sup>3</sup>) a level 11 000 times the acceptable limit in Australia for incinerators;
- Has failed stack emission tests for dioxin for five consecutive years;
- Has been fined over a million US dollars for breach of environmental permits causing air pollution<sup>26</sup>;
- Has been penalized by authorities seven times for breaches of pollution limits including, hydrogen fluoride, hydrogen chloride, sulphur dioxide, carbon monoxide;<sup>27</sup>
- In the September 1999 stack test, the incinerator exceeded cadmium emission standards by 200%, and dioxin standards by nearly 300%;
- Is subject to continuous and growing community opposition; Has been called upon to close by a coalition of Utah medical practitioners;

The Davis County plant suffers from such poor operation and efficiencies that the regulators have permitted the plant to emit an enormous level of dioxin. The Utah Department of Environmental Quality (DEQ) set a limit of dioxin emissions for the plant at 360 ng ITEQ m<sup>3</sup>. According to the Utah DEQ this limit was based on results of dioxin/furan tests conducted in 1993 while the unit was operating under “good combustion practice”.<sup>28</sup>

The breaching of standards and dioxin exceedences call in question the purported safety of incinerators and in particular the conclusion that the incinerator will pose a “negligible health risk” to the community in Brighton.

#### **4.5 The health risk assessment for the Tasmanian incinerator is based an incinerator proposal which has failed to proceed.**

The predicted health impacts of Test Energy’s proposal are based upon a “multi-path health risk assessment (air, soil, food, water) for a waste to energy plant in Western Australia”.

The Western Australia (WA) incinerator proposal was put forward by a company called Global Olivine. The health risk assessment Global Olivine produced was based upon the operation of two Global Olivine municipal waste incinerators, one in Washington USA, and the other in Nova Scotia, Canada and some wood burning plants<sup>29</sup>.

The Canadian incinerator, in Nova Scotia, is operational despite protests from local communities and the USA Washington incinerator is closed down because of air emission and ash disposal violations. The incinerator operations led to significant contamination of the site and the groundwater beneath it with the Olivine site now listed as a tier three Superfund (contaminated) site.

The data used in the WA health risk assessment can be called into question, given video footage which Greenpeace holds, showing that the performance of these incinerators is far from ideal.

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<sup>26</sup> Rogers, R., *Davis burn plant is fined \$1,098,954* Deseret News

<sup>27</sup> Utah Department of Environmental Quality, Davis County Municipal Waste Incinerator Fact Sheet. 2001. Accessed online 3/01/03.

<sup>28</sup> See appendix 6 for EPA fact sheet and News Reports.

<sup>29</sup> This is verified in a report; Sinclair Knight Merz, 2002. Process Engineering Review of Waste to Energy Plant Kwinana Western Australia. Project No. AP00366.

The video evidence clearly shows the Washington incinerator closed down, with holes in the combustion chamber, and piles of ash in unsecured hoppers. The video evidence of the Nova Scotia (taped from a news broadcast) incinerator shows a loader driver removing flaming ash from the combustion chamber, calling into question the temperature of the combustion chamber. The news report shows workers and community speaking out for the problems to be solved.

This information calls into question the input data on dioxin and other contaminants used in the WA health risk assessment, which in turn raises doubts about the veracity of the health risk assessment itself. This therefore raises the issue of whether it is acceptable for Test Energy to rely on this health risk assessment for the Tasmanian incinerator.

Greenpeace's screening of this video evidence to WA State government regulators last year, raised serious concerns about the WA incinerator proposal. On April 11 2003, it was reported that the Global Olivine incinerator proposal would not be pursued by Kwinana Council in WA, and instead the council would make a long term commitment to the use of the Southern Metropolitan Regional Council Resource Recovery facility.

#### **4.6 Incineration is not clean energy, and if petrochemical products are burnt the energy is not legally "renewable". Incineration is a waste of energy**

The Test Energy development proposal discusses how the incinerator will avoid greenhouse gas emissions from landfill and produce "renewable" energy, therefore providing a positive environmental benefit regarding human induced climate change.

##### **4.6.1 Landfill problems can be reduced without incineration**

It is true that landfills produce methane, a powerful greenhouse gas. However, this is caused by rotting organic matter such as green waste and food waste. The rotting matter also creates acids which cause leachate from landfills.

Reducing methane emissions and leachate from organic matter can be achieved without incineration. All that is required is to divert the green waste for composting. This is a simple, age old and "low tech" solution to serious environmental problems with landfills. Organic waste can also be treated in an anaerobic digester to capture biogas which can then be used as a fuel.

##### **4.6.2 Burning plastic is not renewable energy**

Test Energy set out a greenhouse gas calculation based on two scenarios, one burning all of the plastics coming through the plant, and another of burning half of the plastics. Plastics have a high energy or "calorific value". Petrochemical based plastics burn hot, thereby producing a high energy output to create steam and generate electricity.

There are two problems with burning plastics in the incinerator. Firstly Test Energy are required by their permit to ensure recyclable materials are indeed recycled. The "resource recovery" scenario is one of the underpinning reasons put forward by Test Energy as to why the incinerator is an environmentally friendly and green option for Tasmania.

Test Energy should therefore attempt to burn as little plastic as possible, and try instead to find markets for those plastics which do not currently have one.

Secondly, Test Energy are prevented by law from claiming renewable energy credits for any electricity created from fossil fuel based products. Plastics are derived from fossil fuels.



### **4.6.3 Burning waste is a waste of energy**

Burning products can recover some of the calorific value of a product, however the energy used to make the product is wasted. This uses finite resources in a linear way rather than re-using materials and creates an additional environmental burden. New raw materials must be extracted, energy used to transport and manufacture the new products. These processes will also create toxic pollution in transport and manufacturing processes. For every tonne of mixed material recycled, 0.8mTCE (million tonnes of carbon equivalent) are saved, which is four times as much as incineration<sup>30</sup>.

Materials such as paper and wood should be recycled and re-used. Recycling paper in a modern mill uses 3-7 times less energy than a primary paper mill and costs 35% less to produce a paper product<sup>31</sup>. Recycling plastics saves 3.7 to 5.2 times more energy and recycling metal saves 30 to 888 times more energy than is gained through incineration<sup>32</sup>.

Thus, incineration actually undermines energy recovery and reuse, and burning waste destroys what are essentially urban reservoirs of resources.

A recent European Commission opinion delivered in September 2002, defined waste incineration as a method of waste disposal, not recovery or recycling. This means that incineration occupies the lowest level on the waste hierarchy tier, beside landfill. At least with landfill it would be possible at some stage in the future to recover residual material for re-use, which is impossible with incineration.

### **4.6.4 Incineration of waste is not clean energy**

Finally, because of the production of toxic ash and gases, incineration is in fact a very dirty fuel with which to generate energy. The case of toxicity of ash and incinerators breaching their emission standards by 1300 times is an example of how dirty incineration technology is. Furthermore, because the fuel is industrial and domestic waste, it is very likely to contain some contaminated material.

## **4.7 Incineration will prevent innovative employment and business opportunities in resource recovery in Tasmania**

The Test Energy development proposal states that there will be 100 permanent jobs at the plant. In a subsequent newspaper article the Test Energy managing director is quoted as saying that 45-50 jobs will be created. Such flexible estimates are not helpful in ascertaining the true impact of the incinerator on Tasmania society.

It is expected that the incinerator plant itself will be highly mechanised and automated, and require a reasonably low level of staffing compared with employment in current waste management techniques.

There will be employment opportunities in the “front end” recycling and sorting plants. However these will be provided by the recovery and recycling businesses who may join the project should it proceed. Employment and business opportunities in resource recovery can occur without an incinerator. Indeed, it is probable that jobs and small business opportunities will be lost in the Hobart region if the incinerator is built.

Injecting more infrastructure into re-use and recycling, instead of incineration, could lead to more jobs in this sector. Reports show that recycling can produce up to ten times as many jobs as incinerators, given the same amount of waste<sup>33</sup>.

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<sup>30</sup> Murray, R. *Creating Wealth from Waste*. 1999 London:Demos p171.

<sup>31</sup> Zero Waste New Zealand Trust,1992. *Waste Opportunity: A Closer Look at Landfilling and Incineration*, p13.

<sup>32</sup> Ibid, p12.

<sup>33</sup> See case studies Zero Waste. [www.greenpeace.org.au/toxic/zerowaste](http://www.greenpeace.org.au/toxic/zerowaste)

## 4.8 Incineration is expensive

Australian studies have indicated that incineration is an expensive waste management option. *The National Packaging Covenant Council, Independent Assessment of Kerbside Recycling in Australia Revised Final Report - Volume I*, Nolan-ITU Pty Ltd and Sinclair Knight Merz, January 2001, points out that waste-to-energy systems cost up to twice as much to run.

The report comments on the treatment of all waste:

" The costs of Waste-to-Energy systems in other countries are between \$150 and \$500/t input depending on emission standards, throughputs and other factors. As there are a number of companies promoting thermal technologies in the local market at low costs, a processing cost of \$150/t has been assumed. The overall average cost per household would be at least \$215 per year, ie \$70 to \$110 more than for current systems"

Advocates of incineration suggest it saves money. But the economics of incineration do not stand up to scrutiny. Incinerators, particularly those that have pollution control systems installed, are formidably expensive. Local authorities that invest in incinerators often find they have less money to invest in more sustainable forms of waste management, such as reuse and recycling. Incinerators rely on the continued generation of waste to support their high building and operating costs.

Aside from the huge capital costs, many incinerators are plagued by unexpected maintenance costs, explosions and unanticipated down-time, an extra cost burden on local economies. Incineration does not generate as many jobs in local communities as waste reuse, recycling and composting schemes do. In addition, the human costs of damaged health and the environment are impossible to measure.

## 4.9. Is the incinerator a viable proposal?

Recent media statements (Mercury, 8 March 2003) by Test Energy's Managing Director, that the plant may need to be halved in size due to inability to gain sufficient waste contracts, calls into question the viability of the proposed incinerator business.

Test Energy has indicated that the plant requires 120,000 tonnes of waste to be viable.<sup>34</sup> Halving of the size of the proposal indicates a capacity of 90,000 tonnes of waste per annum. Although a smaller plant will reduce the initial capital outlay, halving the size of the plant does not necessarily halve the cost of the plant, because the expensive pollution control equipment and the site infrastructure will still need to be installed.

## 4.10. There are non-incineration solutions underway in Australia and around the world which divert up to 85% of waste away from landfill and create hundreds of jobs

A new Greenpeace report called *Cool Waste Management*<sup>35</sup> shows that "state of the art" waste management is possible, based on available technology, without the use of incineration. The methodology is based on maximum source separation of waste for re-use and recycling, then a further screening of residual waste to remove recyclables and hazardous elements of waste<sup>36</sup>. Green waste and organic matter are also removed and processed into garden mulch, compost and methane recovery. This approach of harvesting the valuable resources in the waste stream can divert 80% or more waste from landfill. It also provides significant economic benefits such as job creation and creating new business opportunities.

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<sup>34</sup> Environmental Assessment Report, (DPIWE) April 2001, p48.

<sup>35</sup> Eunomia, TBU Environmental Engineering Consultants, Greenpeace Environmental Trust, 2003. *Cool Waste Management: A State of Art Alternative to Incineration for Residual Municipal Waste*.

<sup>36</sup> Downloadable from [www.greenpeace.org.au](http://www.greenpeace.org.au)

Zero Waste is a movement growing around the world. It is a vision for a sustainable society and a whole-system approach to addressing the problem of society's unsustainable resource flow. It's an approach that's working in Canberra, New Zealand and Canada. Models as set out in Cool Waste Management and setting up in cities and districts around the world help us on the path to Zero Waste. Incineration takes us in exactly the wrong direction.

**Canberra** led the world with its **No Waste by 2010** strategy in 1996. By last year Canberra had reduced its waste to landfill by 40% and now recycles 64% of it's waste-stream, and created 200 new jobs.

In **Western Australia**, the Southern Metropolitan Regional Council say that their Resource Recovery Centre diverts 85% of waste from landfill without the use of incineration.

In **Canada**, the City of Edmonton has reduced its waste to landfill from 80% down to just 30% and Nova Scotians are now diverting half of solid wastes from landfill and created 600 jobs.

**New Zealand** is the first country in the world to set a national target toward **Zero Waste by 2020**. About half the councils in New Zealand – 36 in all – have committed to Zero Waste targets.

These examples show that incineration is not necessary and that other options which encourage innovative industry and employment exist. Such alternatives take us towards a more sustainable and green future. In contrast incineration uses a dirty technology to take us down a wasteful and toxic pathway.

## 5. Conclusion

Greenpeace's vision is for a toxic free and sustainable future. The ten reasons discussed above set out why incineration is not on the pathway to such a future. A new Zero Waste paradigm is growing around the world, with real examples of the social, environmental and economic benefits of the new resource recovery models.

The concerns with the Test Energy proposal are many and varied, and together draw a picture of a technology that is not in the best interests of the people and environment of Tasmania. Incineration is a dirty technology and could impact on Tasmania's clean, green trade image.

It is on this basis that Greenpeace calls for Test Energy to reconsider their investment opportunities and halt the proposal for the incinerator. There are opportunities to invest in truly clean waste models, which do not put resources up in smoke and do not produce highly toxic by-products.

Greenpeace also calls upon the Tasmanian Government to call a halt to the incinerator proposal, and to withdraw the environmental permit in light of the new and re-evaluated information presented in this report. The information raises serious issues for the public health of people and the environment and the Government has a role to protect the health of people, the environment and image of Tasmania.

### *Acknowledgements:*

Greenpeace Australia Pacific acknowledges the extensive research and writing of the report "The Test Incinerator, Burning the Clean Green Future" by Lee Bell, from which this report is derived. The valued assistance of Lynne Forster, Emma Giles, Jonathon Cooper, Steve Hesse, Pat Costner is also acknowledged for their important contributions to this report.



# The Case against Incineration

## Ten reasons to say NO to the TEST Incinerator

April 16, 3002

### 1. Executive Summary

This briefing sets out why the decision to allow the construction and commissioning of a waste incinerator in Tasmania should be reversed and instead a policy framework, which aims towards Clean Production and Zero Waste, should be implemented.

#### 1. The volume of ash produced by the incinerator is grossly underestimated

There is no explicit calculation of projected ash generation from the incinerator in any of the publicly available documents, including Test Energy's Development Proposal & Environmental Management Plan (development proposal) and the Department of Primary Industry, Water and Environment's (the department) Environmental Impact Assessment.

In the absence of any supporting data inputs and calculations, the department states that the incinerator will produce a mere 18 tonnes of highly contaminated fly-ash and residues a year.

Test Energy does provide a "block diagram" which shows ash generation figures relative to the amount of waste entering the incinerator complex, with no supporting calculations. When the data in the block diagram are explicitly calculated the total ash generation is 19,000 tonnes per year, with 3,000 tonnes of this being highly toxic fly ash and residue. This is over 150 times more than the department's estimation. [verified by EnviroTest, Dr Miller,G: [Re: Ash Calculations for Proposed Brighton incinerator - Total Energy Services Tasmania Pty Ltd.](#)]

#### 2. Incineration cannot virtually eliminate landfill

- Because of the need to dispose of thousands of tonnes of toxic waste ash every year, incineration will never eliminate landfill.
- The Test Energy incinerator does not propose to deal with all of Tasmania's waste - 60% of Southern Tasmania's municipal waste and 37% of all of Tasmania's industrial waste would *not* be diverted from landfill.
- Incinerators will not remove the responsibility and costs from councils of maintaining current landfill sites.

#### 3. The incinerator may burn hazardous substances

Hazardous substances could find their way into the Test Energy incinerator through various waste streams including;

- Industrial waste [which will now make up 70% of the feed stock waste supply]
- Plastics in household and industrial waste
- Sewage sludge – which contains industrial contaminants

#### 4. Incinerators overseas have breached international dioxin standards

The Test Energy incinerator will use Segher technology. Seghers incinerators in the USA and Belgium have had serious emission and safety problems, causing some incinerators to be shut down.

The Seghers incinerator in Davis County USA that Test Energy refer to in the development proposal has failed stack emission tests for dioxin for five consecutive years and has been fined over a million US dollars for breach of environmental permits causing air pollution [Rogers, R., *Davis burn plant is fined \$1,098,954* Deseret News]

A 'state-of-the-art' Seghers incinerator in Belgium referred to by Test Energy in their development proposal breached dioxin emission standards by 1,300 times in August last year, and has been closed down. Reports said that a 12 kilometre zone was contaminated, including schools and residential housing.

Two Belgian scientists have re-assessed the dioxin emissions from the Seghers Belgian incinerators in Ghent and Wilrijk, which again Test Energy refer to in the development proposal, showing that these incinerators have greater emissions than reported. The study also shows that single point sampling for dioxins, rather than continuous sampling, can **underestimate the actual dioxin emissions** sent into the atmosphere by **30 to 50 times**.

#### **5. No independent health risk assessment was undertaken.**

The predicted health impacts of Test Energy's proposal are based upon a "multi-path health risk assessment (air, soil, food, water) for a waste to energy plant in Western Australia". Originally prepared by Global Olivine, this health risk assessment was based largely on the operation of two Global Olivine municipal waste incinerators in Washington USA, and Nova Scotia, Canada.

Video evidence held by Greenpeace shows serious operational problems with both of those incinerators. The Canadian plant has been criticised by workers and community and showed dangerous operational procedures. The USA plant is visibly falling to pieces, failed its pollution limits, was illegally dumping its toxic ash, and as a consequence was shut down. The site is now needs to be decontaminated.

This information raises the question of whether it is acceptable for Test Energy to rely on this health risk assessment for the Tasmanian incinerator.

It has been reported that Kwinana council is no longer in negotiations with the Global Olivine proposal in WA after the planning approval for the incinerator expired. The council has made a long term commitment to using the Southern Metropolitan Regional Council Resource Recovery Centre.

#### **6. Incineration is not clean energy, and if petrochemical products are burnt the energy is not legally "renewable"**

Test Energy presents the burning of waste and plastics as having positive environmental outcomes in terms of energy recovery. However there are flaws in this approach;

1) Test Energy are required by their permit to ensure recyclable materials are recycled.

The "resource recovery" scenario is used by Test Energy as to claim the incinerator is an environmentally friendly and green option for Tasmania. Burning materials does not further this objective.

2) Test Energy are prevented by law from claiming renewable energy credits for any electricity created from fossil fuel based products. Plastics are derived from fossil fuels, which are the main source of the greenhouse gas, carbon dioxide.

3) Burning products can recover some of the calorific value of a product, however the energy used to make the product is wasted. This uses finite resources in a linear way rather than re-using materials and creates an additional environmental burden. New raw materials must be extracted, energy used to transport and manufacture the new products. These processes will also create toxic pollution in transport and manufacturing processes.

Materials such as paper and wood should be recycled and re-used. Recycling paper in a modern mill uses 3-7 times less energy than a primary paper mill and costs 35% less to produce a paper product. Recycling plastics saves 3.7 to 5.2 times more energy and recycling metal saves 30 to 888 times more energy than is gained through incineration.

#### **7. Incineration could prevent employment and business opportunities in resource recovery in Tasmania**

It is expected that the incinerator plant itself will be highly mechanised and automated, and require a reasonably low level of staffing compared with employment in current waste management techniques. There will be employment opportunities in the "front end" recycling and sorting plants. However these jobs will be provided by those recovery and recycling businesses that may join the project should it proceed, rather than Test Energy.

Employment and business opportunities in resource recovery can occur without an incinerator. Indeed, it is probable that jobs and small business opportunities will be lost in the Hobart region if the incinerator is built. Injecting more infrastructure into re-use and recycling, instead of incineration, will lead to more jobs in this sector. Reports show that recycling can produce up to ten times as many jobs as incinerators, given the same amount of waste

### **8. Incineration is expensive**

The economics of incineration do not stand up to scrutiny. Incinerators are formidably expensive. Local authorities that invest in incinerators often find they have less money to invest in more sustainable forms of waste management, such as reuse and recycling. Incinerators rely on the continued generation of waste to support their high building and operating costs.

Aside from the huge capital costs, many incinerators are plagued by unexpected maintenance costs, explosions and unanticipated down-time, an extra cost burden on local economies. Incineration does not generate as many jobs in local communities as waste reuse, recycling and composting schemes do. In addition, the human costs of damaged health and the environment are impossible to measure.

### **9. Is the incinerator a viable proposal?**

Recent media statements (Mercury, 8 March 2003) by Test Energy's Managing Director, that the plant may need to be halved in size due to inability to gain sufficient waste contracts, calls into question the viability of the proposed incinerator business. Test Energy said in publicly available papers that the plant requires 120,000 tonnes of waste to be viable.

Halving of the size of the proposal indicates a capacity of 90,000 tonnes of waste per annum. Although a smaller plant will reduce the initial capital outlay, halving the size of the plant does not necessarily halve the cost of the plant, because the expensive pollution control equipment and infrastructure will still be required.

### **10. There are non-incineration solutions underway in Australia and around the world which divert up to 85% of waste away from landfill and create hundreds of jobs**

A new Greenpeace report shows that "state of the art" waste management is possible, based on available technology, without the use of incineration. The methodology is based on maximum source separation of waste for re-use and recycling, then a further screening of residual waste to remove recyclables and hazardous elements of waste. Green waste and organic matter are also removed and processed into garden mulch, compost and methane recovery.

This approach of harvesting the valuable resources in the waste stream can divert 80% or more waste from landfill. It also provides significant economic benefits such as job creation and creating new business opportunities. It's an approach that's working in Canberra, New Zealand and Canada.

## Burning waste is no solution

April 2003

*"Far from being the universally proven technology claimed by its promoters, the incineration of municipal trash with energy recovery has been an experiment which has left the citizens of industrialised countries with a legacy of unacceptably high levels of dioxins and related compounds in their food, their tissues, their babies and in wild life."*

Dr Paul Connett  
US waste management expert

"Municipal Waste Incineration:  
A Poor Solution for the Twenty  
First Century" 1998.

The Total Energy Services Tasmania Pty Ltd (TEST) incinerator proposal is part of a new push in Australia to convince councils and state Government into believing there is a quick, easy fix for our waste problems.

Greenpeace believes that waste incineration should be relegated to the last millenium as a poor waste management tool. Australia has the opportunity now to face the new century with long term sustainable solutions, such as Zero Waste and "cool waste management".

Around the world incinerators are being closed down and banned. The UK government recently refused permission to build another incinerator in Edmonton, North London. In the United States, since 1985 over 300 proposals for waste incinerators have been defeated or put on hold. In the Philippines, protests against plans to build the world's largest municipal waste incinerator led to a national ban on incineration in 1999. Many state and local governments around the world like Canada and Argentina have instituted bans against waste incineration following the adoption of progressive waste reduction and recycling programs.

The last operating municipal waste incinerator technology in Australia, the Waterloo incinerator in Sydney, was closed down in 1996 due to pollution levels and community opposition. Now with a rash of new incinerator proposals, Australia is at a crossroads on how to deal with waste.

### Toxic Pollution

In 1994, the US Environmental Protection Agency identified medical and municipal waste incinerators as the largest sources of dioxin emissions to air, responsible for about 84% of the total dioxin emissions in the United States. In Japan, incinerators are estimated to cause 93% of dioxin emissions; in Switzerland, 85%; in Great Britain, 79%; and in Denmark, 70%.<sup>1</sup> This does not take into account dioxins in the slag and fly-ash.

Scientists have identified over 200 toxic, or potentially toxic, substances from the incineration of municipal solid waste and it is likely many other chemicals are emitted that are, as yet, unknown to science. Chemical reactions during incineration also mean that new substances are created, many of which are more toxic than those in the original waste.

<sup>1</sup> Dioxin and Furan Inventories: National and Regional Emissions of PCDD/PCDF; UNEP Chemicals, May 1999.



## Dioxin health impacts:

Cancer IARC class 1 carcinogen

Male reproductive toxicity

Female reproductive toxicity

Developmental impacts in unborn children

Modulation of hormones, receptors, and growth factors

Immune system effects

**Incinerators generate cancer causing dioxins, the most harmful chemicals known to science.** They also release heavy metals, furans and halogenated organic compounds, such as polychlorinated biphenyls (PCBs), and a range of other dangerous pollutants. Significantly higher levels of dioxins are found in people, food and soil near incinerators, in some areas higher than levels the World Health Organisation considers safe.

## Health impacts

The cocktail of pollutants released by incinerators affects the people who live and work around the incinerators. Some of the local human health impacts cited in the Greenpeace report *Incineration and Human Health* include:

- Residents living near a municipal solid waste incinerator in Italy had a 670% increased risk of death from lung cancer.
- A 1989 study found workers at a municipal solid waste incinerator in Sweden between 1920-1985 were found to have a 350% increased likelihood of death from lung cancer.
- Workers at a municipal solid waste incinerator in Italy between 1962-1992 had a 279% increased risk of death from stomach cancer (results could be compounded by other factors like socio-economic status).
- Incinerator ash and stack emissions can damage DNA. Studies of incinerator workers in 1990 and 1992 found raised levels of substances capable of inducing genetic mutation in their urine.

## Danger - Dioxin

The most toxic pollutant we've ever produced, dioxins are so poisonous that a piece of dioxin the size of a grain of rice, distributed directly and equally, is equivalent to the WHO (so-called) acceptable dose for at least 1 million people for a year. However, there is no proven safe level for dioxin.

## "Modern" incinerators still create dioxins

Proponents of incineration technology claim that new 'high-temperature' incinerators and waste-to-energy facilities don't form dioxins because they burn at higher than 800°Celsius. But it is well known that dioxins re-form as the gas temperature goes through the 200 - 450°C temperature range. Dioxins can reform (in even greater concentration) when there is chlorine + carbon at a temperature between 250°C and 650°C, in the presence of oxygen and metal ions. Some pollution control equipment can actually cause an increase in concentrations of dioxins in the solid waste.

## **Outdated monitoring systems underestimate the real level of dioxins**

TEST plan to monitor only 2-3 times a year for 6 hours each time. Such restricted monitoring is unlikely to measure the real level of dioxins being pumped to the atmosphere. New continuous dioxin monitoring systems used in some areas of Europe have revealed that sporadic monitoring will **underestimate** dioxin emissions to air by between **30 – 50 times**.

## **Waste Management NSW is trialling a new plant using cool waste technology in Sydney**

**The UR-3R (Urban Resource-Reduce, Reuse, Recycle) plant will** process 175,000 tonnes of mixed household waste per year. It will recover 17,000 tonnes of glass, plastic, paper and metals, and process the remaining matter into 60,000 tonnes of compost products. Anaerobic digestion will generate 17,000 megawatts of electricity per year from methane gas – reducing greenhouse gas emissions by up to 300,000 tonnes a year

## **Green energy myth**

Today, incinerators are being sold under a variety of guises – fluidised bed incinerators, green energy, biomass systems, thermal treatment plants, “combined heat or power systems” or as waste-to-energy systems. Describing an incinerator as a “resource recovery” or “waste-to-energy” facility is clever verbal camouflage which makes for good public relations. The reality is that these modern trash incinerators produce very little energy. Energy production certainly does not justify the huge costs involved in building them. Incineration recovers few resources and in fact represents a net energy loss when the embodied energy of the materials burned is included in the accounting.

Recycling saves more energy than can be derived from incineration, reduces the energy needed to find and exploit more natural resources and reduces the energy used by manufacturing.

US studies in 1993 and 1994 show that if the usable recyclable material, usually burned in a modern trash incinerator, was recycled instead, some 3-5 times as much energy would be saved. The reason: Incineration can only recover some of the calorific value contained in the trash; it cannot recover any of the energy invested in extraction, processing, fabrication and chemical synthesis involved in the manufacture of the objects and materials in the waste stream.<sup>1</sup> Reuse and recycling can.

Just last year UK Energy Minister Brian Wilson stopped the expansion of the Edmonton Incinerator because it would undermine recycling targets for North London: “To grant consent for the extension would result in a station...capable of handling all of North London Waste Authority’s municipal waste and could mean that the NLWA had little incentive to do more recycling over and above the minimum required by statute.” May 23, 2002

## **Incineration – the bottom of the waste hierarchy**

Incineration should be considered at the bottom of the waste hierarchy. A recent opinion of a European Court judge confirmed that incineration of waste is 'disposal' and not 'recovery'.

If there are products that cannot be reused or recycled, they should be redesigned so that they can be. For this to occur there needs to be visionary policy leadership from councils, governments and industry. This is already happening in some places in Australia and around the world in the move towards Zero Waste.

Incineration also adds toxic waste in the form of ash to landfill, a toxic legacy for future generations.

## **Cool Waste technologies - alternatives to incineration**

The choice is not simply between old-fashioned land-fill and 'magic bullet' incineration. Other modern alternatives exist which will reduce waste volumes and maximise resource recovery. A leading example is Mechanical-Biological Treatment (MBT), which involves:

- source separation of waste into distinct streams – to maximise recovery of all recyclables, including organic waste;
- aerobic treatment (composting) or anaerobic digestion (fermentation) to break down organic waste and generate energy in the form of bio-gas or methane.

## **The Zero Waste Solution**

Cool waste management models further the transition to a Zero Waste society, an approach being pioneered by leading corporations, municipalities, and progressive governments. It strikes at the heart of the waste problem by tackling the way products are designed and changing the way waste is handled so that products last longer, and materials are re-used, recycled, or composted. The philosophy has arisen out of the realisation that the wastefulness of our industrial society is compromising the ability of nature to sustain our needs and the needs of future generations.

## **Canberra leads the world in its commitment to implementing Zero Waste by 2010**

Since 1996 the ACT has transformed its waste management approach and now recycles around 64% of its waste stream. 200 jobs have been created, generating \$6million in wages, with a revenue multiplier effect of \$18m on local service industries. Resource recovery has more than doubled and waste to landfill has been reduced by 40%.

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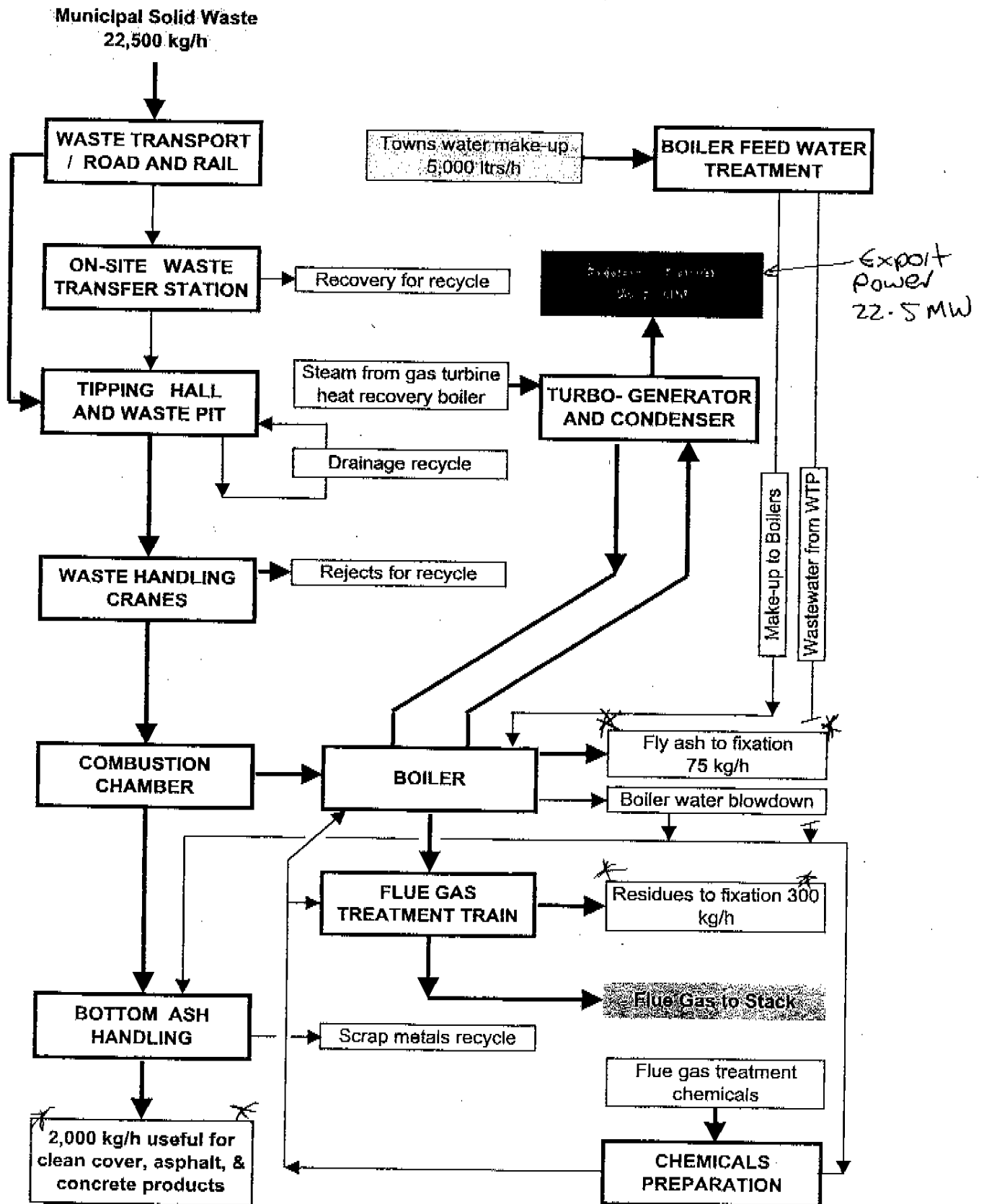
[www.noharm.org](http://www.noharm.org)

[www.no-burn.org](http://www.no-burn.org)

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Appendix 1

### WASTE TO ENERGY PLANT - Block Flow Diagram



## Appendix 2

### **Re: Ash Calculations for Proposed Brighton incinerator** **- Total Energy Services Tasmania Pty Ltd**

I have reviewed the calculation of projected ash generation from the Brighton Waste to Energy Plant as shown in Table 1 Technical Note prepared by Pat Costner, Senior Scientist, Greenpeace International (9 April 2003).

These calculations are based on the following waste generation data taken from the “Waste to Energy Plant – Block Flow Diagram”.

Municipal solid waste feedrate:	22 500 kg/h
Fly ash generation rate at boiler:	75 kg/h
Flue gas treatment residues generation rate:	300 kg/h
Bottom ash generation rate:	2000 kg/h

The projected operational time is 8000 hours per annum. As shown in Table 1 of the Technical Note, the total calculated ash waste is 19 000 tonnes per year, which is equivalent to 10 per cent of the solid waste feedstock. Municipal wastes (or rubbish) can be expected to contain in the order of 10% non-combustibles.

Ash generation rates can also be calculated as:

Fly ash/scrubber residue	13.3 kg/tonne of waste combusted
Boiler ash	3.3 kg/tonne of waste combusted
Bottom ash	88.9 kg/tonne of waste combusted

It is agreed that the projected ash rates may considerably underestimate the actual rates unless the combustible composition of the proposed waste feedstock is characterised in some detail.

In a common calculation for a Waste-to-Energy Plant, the ash residue is assumed to be 20% of the MSW, dry.

(Ash leaving a plant is assumed to have a 50% moisture content.)

It is agreed that the ash materials produced by the proposed incinerator would generate 19 000 tonnes of hazardous ash wastes each year.

This is a major hazardous waste issue and clearly appears to conflict with a reported hazardous ash waste value of 18 tonnes per annum (see Environmental Assessment Report, DPIWE).

The diagram, "Waste to Energy Plant – Block Flow Diagram," shows as follows:

Municipal solid waste feedrate: 22,500 kg/h  
Fly ash generation rate at boiler: 75 kg/h  
Flue gas treatment residues generation rate: 300 kg/h  
Bottom ash generation rate: 2,000 kg/h

The Waste to Energy Plant is projected to operate for 8000 hours per annum<sup>1</sup>, resulting in the following ash generation totals:

Ash source	kg /hr	Hours of operation per year	kg /yr	Total Tonnes/yr
Flue gas residue	300	8000	2,400,000	2,400
Boiler fly ash to fixation	75	8000	600,000	600
				subtotal 3,000
Bottom ash generation	2000	8000	16,000,000	16,000
<b>Totals</b>	<b>2375</b>	<b>8000</b>	<b>19,000,000</b>	<b>19,000</b>

Table 1: Calculation of projected ash generation from Brighton Waste to Energy Plant

First, ash residues from boilers are most commonly identified as "boiler ash", while residues from flue gas treatment are most commonly referred to as "fly ash" or, as appropriate, "fly ash/scrubber residue". I.e., the information presented in the diagram would, most commonly, be taken to mean the generation of 75 kg/h boiler ash, 300 kg/h fly ash/scrubber residue and 2,000 kg/h bottom ash.

At the reported waste feedrate of 22,500 kg/h, these values can, in turn, be used to calculate the following incinerator-related waste generation rates:

Fly ash/scrubber residue: 13.3 kg/tonne of waste burned  
Boiler ash: 3.3 kg/tonne of waste burned  
Bottom ash: 88.9 kg/tonne of waste burned

In contrast, the European Union Dioxin Inventory presents the following incinerator-related waste generation rates:<sup>2</sup>

Fly ash: 30-38 kg/tonne of waste burned  
Boiler ash: not addressed  
Bottom ash: 300 kg/tonne of waste burned

The rates at which fly ash and bottom ash are generated will necessarily depend on many factors, such as waste content and characteristics, incinerator design and operation, flue gas treatment system design and operation, etc.

<sup>1</sup> Total Energy Services Tasmania Pty Ltd, February 2001. Responses to Comments on the Development Proposal & Environmental Management Plan, p9.

<sup>2</sup> Wenborn, M., King, K., Buckley-Golder, D., Gascon, J., 1999. Releases of Dioxins and Furans to Land and Water in Europe. Final Report. Report produced for Landesumwamt Nordrhein-Westfalen, Germany on behalf of European Commission DG Environment. September 1999.

Nonetheless, this comparison with the projected incinerator residue generation rates and those used in the European Union Dioxin Inventory suggest that the projected rates may considerably underestimate actual rates.



## Appendix 3

### Calculation of diversion rates by Test Energy Incineration Proposal

Waste generation in Tasmania:

Municipal waste: 132 233 tpa  
Industrial waste: 200, 000 tpa

Test Energy indicates that they will be looking for a 70% industry waste/30% municipal waste feedstock mix. Given a total throughput of 180, 000 tonnes per annum, the feedstock would equate to 126, 000 tonnes of industrial waste and around 54 000 tonnes of municipal waste.

Removing 54,000 tonnes of municipal waste out of Southern Tasmania's annual generation of 132 233 tpa of municipal waste would still leave 78 233 tpa of municipal waste that may end up in landfill. In other words TEST will only be able to process around 40% of Tasmania's municipal waste. This leaves 60% of municipal waste still directed to landfill with some recycling.

In terms of industrial waste the Department of Primary Industry Water & Environment estimates 200, 000 tpa are generated in all Tasmania. If Test Energy's capacity is 180 000 tpa and 70% of waste burned will be industrial waste (i.e. 126,000 tpa) around 74,000 tpa will still need to be directed to landfill. In other words TEST *will not divert*

- 78 233 tpa (or 60%) of Southern Tasmania's municipal waste from landfill.
- 74,000 tpa (or 37%) of all Tasmania's industrial waste from landfill.

## Appendix 4 - St Nicklaas shut down, Belgium

### The MIWA waste incinerator in Sint-Niklaas Belgium is be sentenced on appeal to close the waste incinerator

On November 20 2001, the management of the MIWA waste incinerator in Sint-Niklaas Belgium **is be sentenced on appeal to close the waste incinerator** at last towards December 31 2002. This incinerator was operating since 1977 and has a licence until 2008.

The judgement of the Belgium court of appeal is based on the precaution principle (that means not to wait for scientific consensus to take measures for specific dangers for the environment and for the public health) and on the basic principle of preventive acting (that means to take action to prevent environment damage rather than restore the damage afterwards). The management refuse explicitly to install a denox-filter installation and so they do not apply the best available techniques (BAT). The Belgium court of appeal says that this decision of the management forms a serious threat for a infringement of the environmental laws. The sentenced on appeal to close the waste incinerator is a tool to maintain the environmental law and to prevent the environment damage, with a view to the public interest, says the court of appeal. It's the first time in Belgium that a licensed firm has to close by the court of appeal due environmental violation of the law.

Unfortunate [the judgement](#) is only available in the Dutch language :

The "Workshop Environment and Health Sint-Niklaas" has also started in 1999 the procedure to prosecute the management. This procedure is still pending.

Since 4 years the "Workshop Environment and Health Sint-Niklaas" is fighting the incinerator. In spite of a [own health report of 1998 of the impact of the waste incinerator](#), the politicians and the government refuse till now to close the incinerator while the management is not respecting the Belgium laws. Since two years the green party in Belgium takes part of the government. The green party has the minister of health and environment. Nothing changed.

Hereby the contact address of our lawyer :

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## St Niklaas Judgment in Dutch

Hof van beroep te Gent  
17e Kamer  
Terechtzitting  
van 20.11.2001

milieuzaak (wet 12.01.1993)

2000/AR/1340 - In de zaak van:

1. **DE BAERE Fred**, geboren te Sint-Niklaas op 19 december 1952, aannemer, wonende te 9100 SINT-NIKLAAS, Drielindenstraat 24,
2. **DE LEEUW Kristine**, geboren te Sint-Niklaas op 20 juli 1964, bediende, wonende te 9100 SINT-NIKLAAS, Drielindenstraat 24,
3. **BAERT Willy**, geboren te Sint-Niklaas op 27 december 1926, gepensioneerde, wonende te 9100 SINT-NIKLAAS, Vlyminckshoek 14,
4. **VANHAEVERMAET Godelieve**, geboren te Gent op 2 december 1930, zonder beroep, wonende te 9100 SINT-NIKLAAS, Vlyminckshoek 14,
5. **DE BACKER Deonis**, geboren te Landskouter (Oosterzele) op 17 februari 1947, leraar, wonende te 9100 SINT-NIKLAAS, Kleibeekstraat 2,
6. **DE KERPEL Godelieve**, geboren te Moorse1 (Aalst) op 21 september 1952, lerares, wonende te 9100 SINT-NIKLAAS, Kleibeekstraat 2,

appellanten sub 1 t/m 6 die in toepassing van art. 271 § 1 van de Nieuwe Gemeentewet in rechte treden namens de Stad Sint-Niklaas,

7. **A.B.L.L.O. V.Z.W.**, Aktiekomitee ter Beveiliging van het Leefmilieu op de Linkeroever, B.S. dd. 24.03.1977 onder 2198, nr. griffie Rechtbank van Eerste Aanleg te Dendermonde 1352, met maatschappelijke zetel te 9170 SINT-GILLIS-WAAS, Stationsstraat 126,

appellanten, tegen de beschikking zoals in kortgeding gewezen door de Voorzitter van de rechtbank van eerste aanleg te Dendermonde dd. 06.10.1999, hebbende als raadsman Meester VAN DOOREN Hans, advocaat te 9220 HAMME (O.-VL.), Stationsstraat 50,

tegen :

**de burgerlijke vennootschap onder de vorm van een C.V. INTERCOMMUNALE VERENIGING VOOR HUISVUILVERWERKING MIDDEN-WAASLAND (afgekort MI-WA)**, ingeschreven in de registers van de burgerlijke vennootschappen te Sint-Niklaas onder nr. 16, met maatschappelijke zetel te 9100 Sint-Niklaas, Vlyminckshoek 12,

woonplaats kiezende bij haar raadsman, hierna vermeld,

geïntimeerde, hebbende als raadsman Meester LINDEMANS Dirk, advocaat te 1000 Brussel, Keizerslaan 3,

velt het Hof het volgende arrest:

1. In het tussenarrest van 26 juni 2001 van deze kamer van het Hof werden o.m. het principaal en het incidenteel beroep ontvankelijk

verklaard.

De door het Hof bevolen persoonlijke verschijning van partijen in raadkamer vond plaats op 4 september 2001.

Ter terechtzitting van 23 October 2001 heeft het Hof partijen opnieuw gehoord in hun middelen en conclusies.

De stukken werden ingezien.

2.

Anders dan geïntimeerde het in de notulen van haar raad van bestuur van 3 juli 2001 en in haar persmap van 5 juli 2001 heeft voorgesteld werd in het tussenarrest de klacht van appellanten niet ongegrond verklaard.

(zie farde III met bijkomende stukken van geïntimeerde: stukken f en h)

Het Hof stelde enkel vast dat appellanten niet het bewijs leverden of aannemelijk maakten dat geïntimeerde bij de exploitatie van de huisvuilverbrandingsinstallatie de emissienormen van de rookgassen overschreed, of dat zij ander afval verbrandde dan toegestaan.

Appellanten stoelden hun stakingsvordering tevens op inbreuken op het voorzorgbeginsel en op het beginsel van het preventief handelen.

Het onderzoek van die stelling van appellanten bracht het Hof ertoe geïntimeerde te verzoeken om aanvullende informatie te verschaffen en om een aantal bijkomende stukken neer te leggen. Tevens vond het Hof het aangewezen om een persoonlijke verschijning van partijen te bevelen.

Het Hof formuleerde het aldus:

Er kan vooreerst geen betwisting over bestaan dat ook op geïntimeerde de algemene voorzorgsnorm van toepassing is. Waar geïntimeerde op pagina 34 van haar eerste appelconclusies bevestigt " dat de inachtneming van de volksgezondheid een absolute prioriteit moet zijn voor de wetgever en voor de uitvoerende macht , geldt die prioriteit uiteraard ook voor haarzelf.

Op heden bestaat geen absolute zekerheid dat de exploitatie van een huisvuilverbrandingsoven geen enkel gezondheidsrisico inhoudt voor de omwonenden.

Diverse wetenschappelijke studies evenals het daarover quasi - permanent gevoerd maatschappelijk debat tonen aan dat het een delicate en controversiële aangelegenheid betreft.

(zie de stukken 9, 17, 23, 28, 29, 37, 38, en de aanvullende stukken 39, 40 en 41 in het dossier van appellanten, en in het dossier van geïntimeerde een VITO-studie van september 2000 (stuk 20), uitgevoerd in opdracht van de VMM, en het 'behoedzaam en genuanceerd' antwoord van de Vlaamse Minister van Welzijn, Gezondheid en Gelijke kansen (stuk 24) op een parlementaire vraag van 9 februari 2001)

Naast het artikel 1.2.1. 5 2 van het Decreet van 5 april 1995 houdende algemene beginselen inzake milieubeleid (voorzorgsbeginsel, preventief handelen., .) zijn er de specifieke verplichtingen opgelegd door het reeds in het tussenarrest in extenso aangehaalde artikel 4.C.22 b van het o p 13 augustus 1998 verleende vergunningsbesluit, meer bepaald de verplichting voor geïntimeerde om binnen alle afdelingen van haar bedrijf d e beste technologieën (hierna BBT genoemd) aan te wenden ter

voorkoming of beperking van de emissies en daarover elk jaar te rapporteren.

(zie stuk 1 in het dossier van appellanten: 4.C Bijzondere milieuvoorwaarden)

In haar **BBT-rapport van 1999** vermeldde geïntimeerde dat het Vlaams BBT-Kenniscentrum (VITO-Mol) er voor gekozen had om BBT-studies per bedrijfstak, of per groep van gelijkaardige activiteiten, uit te werken, maar dat de sector huisvuilverbranding nog niet was doorgelicht op een dergelijke manier. Geïntimeerde voegde daaraan toe dat ook op Europees vlak nog geen publicaties op het vlak van BBT beschikbaar waren. (zie pagina's 1/3 en 2/3 van stuk 15 in het dossier van geïntimeerde)

In het **BBT-rapport van 2000** (7 juli 2000) vermeldde geïntimeerde dat er door VITO nog geen BBT-studies i.v.m. rookgaswassingstechnieken waren opgemaakt.

Geïntimeerde verwees wel naar de volgende studies:

- Onderzoek naar mogelijke toepassing van nieuwe afvalverwerkingstechnieken in de provincie Antwerpen (mei 1999, Technische werkgroep met o.a. IGEAN, IGEMO, INDAVER, VLAR en de Provincie Antwerpen)

- Vergelijking van verwerkingsscenario's voor restfractie huishoudelijk afval en categorie II bedrijfsafval (VITO, K. Vrancken et al., voorlopig rapport juni 2000)

- Gemeenschappelijke studie naar alternatieve technieken voor de verwerking van het huishoudelijk en vergelijkbaar bedrijfsafval van de arrondissementen Mechelen en Turnhout (IGEMO & IOK, juni 1999)

(pagina's 4/9 en 5/9 van het BBT-rapport 2000, stuk 15, ibidem)

Bij de toetsing van haar bedrijf aan de technologische vooruitgang en verandering in wetenschappelijke kennis en inzichten verwijst geïntimeerde expliciet naar de huisvuilverbrandingsoven van ISVAG te Wilrijk waar in 1999 een DENOX-systeem (SNCR versie) werd geïnstalleerd, en naar die van IVAGO te Gent waar in 2000 een SCR-versie werd in gebruik genomen.

Het betreft volgens geïntimeerde derhalve een reeds toegepaste technologie, gaat het om een investering die hiervoor duidelijk aan te raden valt, is een SNCR-versie wegens zijn eenvoudig principe aan een goede kwaliteit/prijs verhouding beschikbaar, laat een studie van de financiële situatie door de bedrijfsrevisor toe deze investering op korte tijd te plannen, zal een bijkomende investering in een DENOX-systeem de veiligheidsmarge tussen emissies en emissienorm vergroten, en is het van financieel belang de investering voor een DENOX zo snel mogelijk te doen gezien de installatie slechts een vergunning heeft tot 2008.

(pagina's 7/9 en 8/9, ibidem)

Geïntimeerde deelde in haar rapport mee dat zij een eerste vergelijkende studie tussen de verschillende technische principes (SCR en SNCR) in opdracht had gegeven aan een ingenieursbureau. (zie pagina 719, ibidem)

Kennelijk ging het om de aan de N.V. Miplan in 1999 toevertrouwde opdracht, waarbij dient opgemerkt dat die studie in juli 2000 sinds geruime tijd door geïntimeerde moet zijn gekend, gezien het Miplan-rapport dateert van 25 augustus 1999.

De conclusie van het studiebureau Miplan luidde als volgt:

" Om zowel NOx als de Dioxine uit de rookgassen te verwijderen en om aan de toekomstige emissienormen van deze twee pollutanten te voldoen is het aan te raden een eenvoudige SCR DENOx installatie in de bestaande rookgassen zuiveringsinstallatie te integreren. "

(zie pagina 25/29 van de door geïntimeerde na het tussenarrest neergelegde Miplan-studie)

Kortom, in 2000 stond niets geïntimeerde eraan in de weg om met kennis van zaken, hetzij de beslissing te nemen te investeren in de op dat ogenblik best beschikbare technieken tot voorkoming of beperking van schadelijke emissies, hetzij om de vergunningverlenende overheid, de AMINAL-afdelingen milieuvergunningen en milieu-inspectie te Gent, het college van 'burgemeester en schepenen te Sint-Niklaas en de OVAM te informeren over de motieven om een dergelijke beslissing niet te nemen.

M.b.t. die door Miplan reeds in augustus 1999 gemaakte studie schrijft geïntimeerde in haar op 20 augustus 2001 ter griffie van het Hof neergelegde conclusies:

"...  
*Er zgn dan ook geen nieuwe studies meer geweest. De bestaande studie houdt zyn waarde: indien de DENOx geplaatst zou worden, zou dit het best gebeuren volgens het voorstel van deze voorstudie.*  
*De problematiek van de DENOx filter werd samen met de implicatie van het arrest van het Hof, besproken op een vergadering van de Raad van Bestuur van 3 juli 2001. "*

M.a.w., de beslissing om de best beschikbare technieken niet aan te wenden, of anders gezegd de veiligheidsmarge niet te verhogen, werd door geïntimeerde genomen op 3 juli 2001, d.i. quasi twee jaar na het (positief) advies van Miplan en één jaar na de bevinding door geïntimeerde zelf dat een dergelijke investering aan te raden was.

De verwijzing door geïntimeerde in haar laatste appelconclusies naar de artikels I , 29° Vlarem I en naar artikel 4.4.3.1.4. Vlarem II , stellende dat overeenkomstig die wetsbepalingen haar geen overmatige hoge kosten kunnen worden opgelegd, is niet dienend. Het Hof herinnert geïntimeerde eraan dat zij in haar BBT-rapport van juli 2000 schreef dat een SNCR-versie wegens zijn eenvoudig principe aan een goede kwaliteitprijs verhouding beschikbaar was, dat een studie van de financiële situatie door de bedrijfsrevisor toeliet deze investering op korte tijd te plannen, en dat het van financieel belang was de investering voor een DENOx zo snel mogelijk te doen gezien de vergunning slechts tot 2008 liep.

Geïntimeerde voert nog aan dat de rechter artikel 4.1.2.1. VLAREM II zou schenden door uit het louter mogelijk bestaan van een betere technologie - ongeacht de kostprijs van haar toepassing - af te leiden dat elke exploitant die ook onmiddellijk moet toepassen op straffe van sluiting.

Die stelling van geïntimeerde snijdt geen hout. Aangenomen dat een zo groot mogelijke veiligheidsmarge niet tegen om het even welke prijs kan worden opgedrongen, is er de vaststelling die in juli 2000 door geïntimeerde zelf werd gemaakt

dat de installatie van een DENOx-systeem financieel haalbaar was, en dat precies om de kosten binnen aanvaardbare perken te houden zonder dralen tot die investering moest worden beslist.

Het Hof voegt daar aan toe dat indien de stelling van geïntimeerde zou worden bijgevallen, een min of meer lange periode van besluiteloosheid zou volstaan om naderhand te argumenteren dat de toepassing van de best beschikbare technieken financieel en/of bedrijfseconomisch niet meer te verantwoorden valt. Getoetst aan het voorzorgsbeginsel en aan het beginsel van preventief handelen is een dergelijke stelling onverdedigbaar.

Evenmin kan de argumentatie van geïntimeerde worden bijgevallen dat er nog een optreden van de regelgevende of vergunningverlenende overheid nodig is vooraleer toepassing kan worden gemaakt van de best beschikbare technieken.

De aan geïntimeerde luidens de milieuvergunning van 13 augustus 1998 opgelegde verplichting is eenduidig:

"...  
*In dit kader dient jaarlijks een rapport opgemaakt met beschrijving van de op dat ogenblik beschikbare technologie voor rookgaszuivering (tot maximale bescherming van de emissies en immissies)*  
*Dit rapport dient tevens te vermelden welke bijkomende maatregelen effectief zullen genomen worden. gekoppeld aan uitvoerinastermijnen.*  
..."

(onderstreept door het Hof)

In het **BBT-rapport van 26 juli 2001** valt o.m. te lezen:

"...  
*Verwijzend naar de door VITO recent uitgevoerde studie waarin een SCR-DENOx als een installatie met een betere performantie wordt beoordeeld is anno 2001 het SCR-systeem het aan te raden DENOx-systeem. Indien Mi- Wa beslist een DENOx systeem te installeren is het SCR-type aan te raden.*  
*Voor verdere details verwijs ik naar de voorstudie uitgevoerd door het studie bureau waarvan het eindrapport afgewerkt is eind 1999.*  
..."

Als besluit worden dan de drie mogelijkheden opgesomd, evenwel zonder een keuze te maken: zo snel mogelijk de bouw van een DENOx starten, een afwijking vragen bij de Minister van Leefmilieu op de Europese Richtlijn 2000/76/EG voor de rest van de vergunningstermijn, of zonder verdere investeringen blijven verder werken tot eind 2005.  
(zie het BBT-rapport 2001, fardes III van het dossier van geïntimeerde)

Evenmin als dit in 2000 het geval was wordt in 2001 de vergunningverlenende overheid door geïntimeerde geïnformeerd over welke maatregelen effectief zullen worden genomen en welke uitvoeringstermijnen zullen worden in acht genomen.

Waarom geïntimeerde die informatie niet verschaftte of kon verschaffen zegt zij niet, maar het blijft bizar dat op 26 juli 2001 geïntimeerde in haar BBT-rapport nog alles open laat, waar zij drie weken voordien, op 3 juli 2001 formeel beslist heeft geen DENOx-

filter te plaatsen, geen afwijking op de Europese Richtlijn te vragen, en tot 31 december 2004 verder te werken.

Tijdens de persoonlijke verschijning op 4 september 2001 verklaarde Johan De Cuyper, voorzitter van de raad van bestuur van geïntimeerde, aan het Hof:

*" Op uw vraag of er tussen 25 augustus 1999 (datum van het Miplan-rapport) en de vergadering van de raad van bestuur op 3 juli 2001 expliciet op de dagorde is vermeld en besproken of er al dan niet filters zouden geplaatst worden is mijn antwoord dat dat niet het geval is.  
Ik voeg er aan toe dat eenmaal per maand een raad van bestuur wordt gehouden.*

*De beslissing om de verbrandingsactiviteiten definitief en onomkeerbaar te staken op 37 december 2004 werd genomen, rekening houdende met financieel economische motieven, dat wil zeggen een afweging tussen enenijds de investeringskosten die gepaard gaan met de installatie van de filters en andenijds de einddatum van de exploitatievergunning (april 2008).*

*Tevens waren er maatschappelijke politieke argumenten, in de eerste plaats de onmogelijkheid om op dezelfde plaats een nieuwe installatie op te richten en de politieke beslissing die werd genomen door de stad Sint-Niklaas, hoofdaandeelhouder, om de verbrandingsactiviteiten binnen de lopende legislatuur stop te zetten.*

*Op de vergadering die op 26 juni 2001 werd gehouden met de vennoten (de burgemeesters) van de betrokken gemeenten die aandeelhouder zijn is er beslist om het reconversieplan goed te keuren ..."*

Rudy Verlaeckt, directeur van geïntimeerde, verklaarde tijdens diezelfde persoonlijke verschijning :

*" Het BBT rapport van 2 juli 2000 is in de raad van bestuur besproken en goedgekeurd.  
Tussen dat BBT rapport van juli 2000 en de vergadering van de raad van bestuur van 3 juli 2001 is het al dan niet plaatsen van de filters nooit formeel op de dagorde gekomen.  
Dat sluit niet uit dat er op informele wijze overleg werd gepleegd met het dagelijks bestuur en met de beleidsmensen. "*

Het Hof laat opmerken dat de verklaringen van voorzitter Johan De Cuyper en directeur Rudy Verlaeckt afwijken van de ter terechtzitting van 23 oktober 2001 neergelegde notulen van de raad van bestuur van 17 augustus 2000 en van 12 oktober 2000.

In de notulen van de raad van bestuur van 17 augustus 2000 wordt onder punt 7. vermeld:

Voor wat betreft het milieuverslag leest de directeur de algemene conclusie voor:

*"Mi-Wa heeft er in de periode 1/7/99 t/m 30/9/99 alles aan gedaan om de milieuwetgeving minstens na te leven. Op sommige vlakken (b. v. meetcampagnes en werkelijk emissies) is het bedrijf verder gegaan dan wettelijk verplicht. Een mogelijke hinder naar mens en leefmilieu wordt op deze wijze tot een minimum beperkt. Er dienen*



*nog enkele kleine aanpassingen uitgevoerd te worden maar ook hieraan wordt continu verder gewerkt. Het bedrijf is bezig met het opzetten van een gestandaardiseerd milieuzorgsysteem. "*

*Ook het BBT (Best beschikbare Technologie) rapport is positief en enkel de parameter NOx zou beter kunnen. Daarom dient men rekening te houden dat er in de toekomst waarschijnlijk geïnvesteerd dient te worden in een DENOX-installatie.*

*De directeur wijst hier op het feit dat de bedrijfsrevisor momenteel bezig is met de opdracht voor de werkgroep 2000-2008. In zijn scenario's tot 2008 zal hij twee hypothesen maken: één met deze investering en één zonder deze investering. Deze investering zal ongeveer 40 miljoen BEF bedragen. "*

*(zie farde IV, stuk I a van de laatste aanvullende stukken van geïntimeerde - notulen ondertekend door Johan De Cuyper en Rudy Verlaeckt)*

*De financiële analyse waarnaar wordt verwezen werd op 7 juni 2000 door geïntimeerde gevraagd aan bedrijfsrevisor W. De Neef. Het rapport was op 14 september 2000 beschikbaar.*

*De investering in 2002 voor de NOx-installatie werd begroot op 45 miljoen BEF. (zie farde IV, stuk 3 in het dossier van geïntimeerde)*

*In de notulen van de vergadering van diezelfde raad op 12 oktober 2000 wordt onder punt 3. vermeld:*

*" De directie geeft een toelichting bij de financiële analyse opgesteld door de bedrijfsrevisor, de heer De Neef. In deze bedrijfseconomische analyse werd rekening gehouden met twee scenario's: nl. één tot 2008 en één bij een stopzetting in 2004. Bij de eerste hypothese werd rekening gehouden met een investering in een NOx-installatie in 2002.*

*Deze analyse houdt geen rekening met hef sociaal passief (personeel) noch met de ombouw of sanering van de site, noch met de meerkost voor het eventueel afvoeren naar een andere afvalverwerker bij een vroegtijdige sluiting.*

*Voor beide scenario's werd in een overzichtelijke tabel de evolutie van de kosten en de vrijkomende middelen in functie van de eventuele stopzetting van de afvalverbranding bij Mi- Wa weergegeven.*

*Grosso modo kan men stellen dat het break-even punt in beide scenario's rond 2003 ligt,*

*Bij de eerste hypothese (verbranden tot einde vergunning) zal Mi-Wa middelen genereren voor de bijkomende kosten, die kunnen oplopen tot meer dan 300 miljoen BEF in 2001.*

*Bij de tweede hypothese zullen de vennoten voor deze kosten moeten opdraaien plus de meerkosten voor verwerking op een andere locatie.*

*Het College van Commissarissen zal eerst dit rapport analyseren. Na haar advies zal de Raad van Bestuur dit rapport overhandigen aan haar vennoten."*

*(stuk I b , notulen ondertekend door Johan De Cuyper en Rudy Verlaeckt, ibidem)*

*De analyse door het college van commissarissen ligt niet voor, doch hoe dan ook duurde het tot 3 juli 2001 vooraleer geïntimeerde een beslissing nam en voor de tweede hypothese koos: er wordt geen DENOX-filter geplaatst, de Europese richtlijn 2000/76/EG van 4 december 2000 wordt in zijn striktste zin uitgevoerd en er wordt geen afwijking aangevraagd, en de verbrandingsactiviteiten worden gestaakt op 31 december 2004. (zie stuk 1c, notulen ondertekend door Johan De Cuyper en Rudy*

Verlaeckt, ibidem)

Het Hof maakte reeds in het tussenarrest volgende overweging:

Getoetst aan de BBT-voorwaarden in artikel 4 C 22 b van de milieuvergunning van 13 augustus 1998, en in acht genomen haar eigen bevindingen in het BBT-jaarverslag van 2000, kan in redelijkheid niet anders geconcludeerd worden dan dat op geïntimeerde de stringente verplichting rust een zo groot mogelijke veiligheidsmarge in acht te nemen.

Een dergelijke verplichting is een toepassing van het 'beginsel van het preventief handelen' dat voorschrijft dat men moet optreden om milieuschade te voorkomen eerder dan de schade achteraf te moeten herstellen.

Evenzeer is een dergelijke verplichting een toepassing van het 'voorzorgbeginsel' dat betekent dat men niet moet wachten op een wetenschappelijke consensus om bepaalde potentiële gevaren voor het milieu en voor de volksgezondheid aan te pakken.

Geïntimeerde kan zonder het verwijt te krijgen van inconsistentie niet eensdeels voorhouden dat haar initiatief om bijkomende investeringen te doen teneinde de emissienormen nog meer naar beneden te brengen bewijst dat zij aldus haar afvalverbrandingsinstallatie als een goed huisvader beheert en zij aldus het zorgvuldigheidsbeginsel ten volle respecteert, en anderdeels stellen dat het appellanten niet behoort na te gaan of die bewering met de werkelijkheid overeenstemt en dat daarover desgevallend geen rechterlijke controle kan plaats vinden.

Appellanten zijn als omwonenden gerechtigd op een adequate en zo groot mogelijke bescherming van hun gezondheid. Een daarbij aansluitende rechterlijke controle kadert in de preventieve werking van de wet van 12 januari 1993.

Die controle slaat op de door geïntimeerde aangewende middelen ter voorkoming van milieuschade, en op de vraag of het gaat om de 'best beschikbare technieken' zoals door de vergunningverlenende overheid is opgelegd, en zoals zij overigens zelf voorhoudt.

Indien geïntimeerde niet scrupuleus de verplichtingen naleeft die haar door de vergunningverlenende overheid worden opgelegd, d.i. in casu het aanwenden van de 'best beschikbare technieken' om het totale effect van de emissies op het milieu te voorkomen of tot een minimum te beperken, is dit gelijk te stellen met een ernstige dreiging zoals bedoeld in artikel 1 van de wet van 12 januari 1993.

Het Hof stelt vast dat geïntimeerde, wetens en willens, heeft beslist om geen investeringen te doen waarbij voor de resterende vergunningsperiode de best beschikbare technieken zouden worden aangewend.

Op grond van financieel-economische overwegingen heeft geïntimeerde beslist haar huisvuilverbrandingsoven verder te exploiteren tot 31 december 2004.

Die beslissing van geïntimeerde om in die omstandigheden haar verbrandingsactiviteiten verder te zetten tot en met 31 december

2004, zonder gebruik te maken van de best beschikbare technieken vormt naar het oordeel van het Hof een ernstige dreiging in de zin van artikel I van de wet van 12 januari 1993.

Bij ernstige dreiging staat het aan de rechter om adequate maatregelen te treffen ter voorkoming van schade. Desgevallend kan een termijn worden toegestaan om aan de opgelegde maatregel te voldoen.

Luidens de notulen de dato 18 september 2001 van de raad van bestuur van geïntimeerde hebben partijen op 13 september 2001 onderhandeld over een sluitingsdatum.

Appellanten drongen aan op een sluiting van de verbrandingsinstallatie op 1 juli 2002, terwijl geïntimeerde de sluitingsdatum van 31 december 2004 'als finaliteit' wenste te behouden.

(zie farde IV, stuk 4 in het dossier van geïntimeerde)

Een stakingsvordering is niet zozeer een middel om een privaat geschil te beslechten, maar een instrument om, met het oog op het algemeen belang, de milieuwetgeving te handhaven en schade aan het leefmilieu te voorkomen.

Het Hof heeft vanzelfsprekend oog voor het collectief belang dat wordt gediend door de huisafvalverbranding waarmee geïntimeerde zich inlaat, met de tijd die is vereist voor een gebeurlijke ombouw van de ovens tot overslag- en transport unit, met het sociaal passief en dergelijke meer.

Uit de stukken blijkt dat geïntimeerde sinds juli 2001 aan een concreet en globaal plan werkt om aan de diverse problemen die een vervroegde sluiting met zich brengt het hoofd te bieden. (zie de persconferentie van geïntimeerde op 5 juli 2001 die de titel meekreeg "Mi-Wa 2003 - ..." )

Aan geïntimeerde moet derhalve de mogelijkheid worden geboden om in haar conversieplan, dat naar eigen zeggen eind december 2001 zal bekend zijn, rekening te houden met de door het Hof opgelegde sluitingsdatum.

**Rekening houdend met alle in het geding zijnde belangen beveelt het Hof dat geïntimeerde uiterlijk op eenendertig december tweeduizendtwee (2002) de activiteiten in het bedrijf gelegen te Sint-Niklaas aan de Vlyminckshoek 12, bestaande uit het verbranden van afvalstoffen van welke aard of herkomst ook, zal staken onder verbeurte van een dwangsom van 100.000 frank per vastgestelde overtreding.**

Gelet op wat voorafgaat is de tegenvordering van geïntimeerde strekkend tot een veroordeling van appellanten tot het betalen van 50.000 frank wegens tergend en roekeloos geding ongegrond.

## **OP DIE GRONDEN HET HOF**

Rechtdoende op tegenspraak en met inachtneming van artikel 24 van de wet van 15 juni 1935 op het taalgebruik in gerechtszaken. Rechtdoende over de gegrondheid van het principaal en het incidenteel beroep:

Doet de bestreden beschikking teniet, behoudens waar beslist werd over de ontvankelijkheid van de vordering van appellanten,

En opnieuw rechtsprekend,

Verklaart de oorspronkelijke vordering van appellanten in de hierna bepaalde mate gegrond.

**Beveelt dat geïntimeerde uiterlijk op eenendertig december tweeduizendtwee (2002) de activiteiten in haar bedrijf gelegen te Sint-Niklaas aan de Vlyminckshoek 12, bestaande uit het verbranden van afvalstoffen van welke aard of herkomst ook, zal staken onder verbeurte van een dwangsom van 100.000 frank per vastgestelde overtreding.**

Wijst het door appellanten meer gevorderde af als ongegrond.

Verklaart de oorspronkelijke tegenvordering van geïntimeerde ontvankelijk doch ongegrond.

Veroordeelt geïntimeerde tot de kosten gevallen in beide aanleggen aan de zijde van appellanten.

Aan hun zijde worden die kosten tot dusver begroot op:

dagvaarding en rolstelling: 9.672 frank  
rechtsplegingvergoeding eerste aanleg : 4.400 frank  
rechtsplegingvergoeding in hoger beroep 8.800 frank  
aanvullende rechtsplegingvergoeding 2.200 frank  
totaal: 25.072 frank

Aldus gewezen en uitgesproken in openbare terechtzitting van het Hof van beroep te Gent, van de **ZEVENTIENDE KAMER**, zitting houdende in burgerlijke zaken van **TWINTIG NOVEMBER TWEEDUIZEND EN EEN**.

Aanwezig :

Dominique Vandorpe, Raadsheer, Wn. Kamervoorzitter,  
Jenny Dammekens, Griffier

**raadsman van de omwonenden en ABLLO :**

**HANS VAN DOOREN**

**Advokaat**

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Vlaams Platform Milieu en Gezondheid

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## Appendix 5

Belgian Articles from *De Standaard* and accompanying summary translations Seghers incinerator, Indaver  
Antwerp Exceeds dioxin emissions by 1300 times  
Public Opposition to new incinerator  
Free Range Eggs in Antwerp exceed dioxin limits  
Health Inspector opposes new incinerator

### Extra metingen bevestigen overschrijding dioxine- uitstoot **Indaver**

bvb

26/08/2002

belga

**ANTWERPEN - De extra emissiemetingen die het afvalverwerkend bedrijf **Indaver** door een extern laboratorium heeft laten uitvoeren naar aanleiding van de overschrijding van de dioxinenorm in haar statische oven in Antwerpen, bevestigen de overschrijding van de dioxinenorm die reeds bleek uit de eerste metingen, zo maakte Jos Artois, woordvoerder van **Indaver**, maandag bekend.**

De resultaten van de extra metingen bedroegen respectievelijk 12 en 130 nanogram TEQ per kubieke meter rook en bevestigen de resultaten van de eerste meting van 28 nanogram TEQ/Nm<sup>3</sup>. De norm bedraagt 0,1 nanogram TEQ/Nm<sup>3</sup> (één nanogram is een miljardste van een gram, TEQ is de giftigheidsfactor).

In juni en juli onderging de oven die zoutzuur recycleert uit vloeibare chloorhoudende afvalstoffen een grondige revisie.

Op 22 augustus meldde **Indaver**, op basis van de voorlopige resultaten van de extra metingen, dat in de periode van 5 juli (heropstart van de oven na de revisie) tot 14 augustus (vaststelling van de overschrijding van de dioxinenorm en het onmiddellijk stilleggen van de oven) in het slechtste geval, op basis van de 2 hoogst gemeten waarden, in totaal 0,6 gram dioxines werd uitgestoten. Dit ligt 50 maal boven de maximaal toegelaten dioxine-uitstoot van alle installaties van de site Antwerpen voor dezelfde periode.

**Indaver** benadrukte maandag nogmaals dat alle metingen werden uitgevoerd in het kader van een continu zelfcontroleprogramma dat het bedrijf zichzelf heeft opgelegd. Onmiddellijk nadat **Indaver** op 14 augustus door het extern lab op de hoogte werd gesteld van de overschrijding, werden door hetzelfde lab extra metingen uitgevoerd. Daarop werd de installatie uit voorzorg stilgelegd. **Indaver** blijft overtuigd van het „incidentele en kortstondige karakter" van de overschrijding van de dioxinenorm.

De oven wordt pas heropgestart nadat er volledige zekerheid is over de oorzaak van het incident, en nadat de nodige herstellingen of aanpassingen aan de installatie gebeurd zijn, aldus de maatschappij.

## **Extra measurements confirm exceeding norm dioxine emission Indaver**

**Antwerp – The extra emission measurements performed by an external laboratory upon request of wasteprocessing company Indaver due to the exceeding of the dioxine norm in the static incinerator in Antwerp, confirm the first measurements that showed exceeding of dioxine norms, as said by Jos Artois, spokesperson of Indaver, on Monday.**

The results of the additional measurements were 12 and 130 nanogram TEQ per cubic meter air and confirm the results of the first measurement of 28 nanogram TEQ/Nm<sup>3</sup>. The norm is 0.1 nanogram TEQ/Nm<sup>3</sup> (one nanogram is one billionth of a gram, TEQ is the “poison factor”).

The incinerator, that recycles hydrochloric acid from chlorine waste, was revised thoroughly In June and July.

On the 22<sup>nd</sup> of August Indaver announced that in the period from the 5<sup>th</sup> of July (restart of incinerator after revision) until the 14<sup>th</sup> of August (conclusion that the dioxin norms were exceeded and the immediate shut down of the incinerator), in the worse case, based on the 2 highest values measured, the emissions of dioxine reached 0.6 gram in total. This is 50 times the maximum tolerated dioxine emission of all installations of the Antwerp site for the same period.

Monday, Indaver stressed once more that all measurements had been performed in the context of a continuous self-monitoring program that the company submitted itself to. Immediately after Indaver received the information about the exceeding of the norms from the external laboratory, the same external laboratory performed additional measurements. As a precaution, the incinerator was shut down. Indaver remains convinced that these exceedings of the dioxin norms are of “incidental and short-lived character”.

The incinerator will only be restarted after the company finds full certainty about the cause of the incident, and after the necessary repair and improvements have been implemented, said the company.

## **Milieubeweging strijdt tegen vergunning afvalverbrandingsoven**

04/05/2002

**BRUSSEL (belga) -- Het Vlaams Platform voor Milieu en Gezondheid vraagt de Raad van State de milieuvergunning voor de bouw van een nieuwe wervelbedoven op de site van **Indaver** in Doel, te vernietigen.**

De milieubeweging kant zich hiermee tegen de Vlaamse minister voor Leefmilieu, Vera Dua. Die legde een ongunstig advies van haar administratie over de bouw van de verbrandingsoven naast zich. Dat advies is wel niet bindend.

Volgens inspecteur Herman Viaene van de administratie is **Indaver** gelegen tussen andere vervuilende bedrijven en in een industriegebied waar de luchtkwaliteit al is

aangetast.

„Gelet op de ernstige problemen met de verbrandingsovens van Edegem en Wilrijk is de grootste voorzichtigheid geboden, in het belang van de volksgezondheid", aldus de inspecteur.

Volgens Dua past de bouw van de wervelbedoven in haar beleid van alternatieve verwerking van huishoudelijk afval.

## **Environmental movement fights incinerator permit.**

**Brussel – The Vlamish Platform for Environment and Health asks the State Council to destroy the permit for the build of a new “whirlpool/whirlbed” at the premises of Indaver in Doel.**

The environmental movement opposes the vision of the Vlamish minister for Living Environment, Vera Dua. She ignored an unfavourable advise of her administration with regard to the build of a “whirlpool/whirlbed” incinerator. That advise is however not compulsory.

Indaver is located between other pollution companies and it's location is in an industrial area where the quality of the air has already been compromised, according to inspector Herman Vianene of the administration.

“Looking at the severe problems with the incinerators of Edegem and Wilrijk, we'll have to be extremely cautious in the interest of the public health”, said the inspector.

According to Dua, the build of the “whirlpool/whirlbed” incinerator fits her policy of alternative processing of domestic waste.

## **Dioxines in scharreleieren**

(aw)

12/10/2002

**BRUSSEL -- Scharreleieren van kippen met vrije loop in de omgeving van de Antwerpse haven blijken teveel dioxines te bevatten. Dat zegt het Federaal Agentschap voor de Veiligheid van de Voedselketen (FAVV). Of deze besmetting verband houdt met de ernstige milieuvervuiling veroorzaakt door de verbrandingsoven van **Indaver** in Antwerpen, is niet duidelijk.**

Het FAVV vindt in de stalen geen rechtstreeks verband. De stalen werden genomen bij drie particulieren. De besmetting ligt er boven de wettelijke norm. Nieuwe stalen gaven geen duidelijk beeld: zij lagen boven en onder de norm. Onderzoek van de Antwerpse Milieudienst in Berendrecht, gaf een gelijkaardig resultaat.

Het FAVV gaat nu een algemeen onderzoek doen naar dioxines in scharreleieren. In acht bedrijven, verspreid over het hele land, zullen stalen worden genomen. De resultaten van dat onderzoek worden tegen november verwacht.

## Dioxines in free range eggs

**Brussel – Free range eggs from the surroundings of the port of Antwerp contain too much dioxines according to the Federal Agency for the Safety of the Foodchain (FAVV). Whether this contamination can be linked to the serious pollution caused by the Indaver incinerator in Antwerp, is not clear.**

The FAVV is unable to find a direct link based on the measurements. The measurements were taken at the premises of three individuals. The contamination is exceeding the legal norm. New measurements do not give a clear picture, these were above as well as below the norm.

The FAVV will now perform a general study into dioxins in free range eggs. Measurements will be taken in eight companies, spread throughout the country. The results are expected in November.

## Achterban Dua slikt nieuwe afvaloven niet



Van onze redacteur

Antoon Wouters

24/06/2002

**NIEUWKERKEN -- De vergunning voor de bouw van een nieuwe afvaloven in Beveren is voor de natuurlijke groene achterban van minister van Leefmilieu, Vera Dua (Agalev), de druppel die de emmer doet overlopen. De betrokkenen spreken van een „gewezen achterban". De nieuwe oven wordt één van de grootste in Vlaanderen en komt naast een al bestaande grote afvaloven. De bewonersgroepen trekken naar de Raad van State.**

Gewetenloos. Zo bestempelt het Vlaams Platform Milieu en Gezondheid in een open brief de beslissing van de minister om het negatief advies van de Gezondheidsinspectie naast zich neer te leggen. Vrijdag ontving de Raad van State een verzoekschrift tot schorsing en vernietiging van de milieuvergunning. De actie gaat uit van het Platform en van het Actiecomité tot Beveiliging van het Leefmilieu op de Linkeroever (ABLLO).

Het Platform groepeert de „bewonersgroepen" die het niet eens zijn met de aanpak van de klassieke milieubeweging. Daar komt nu het gevoerde milieubeleid van Dua bij. „Voor de verkiezingen werkte Agalev nauw met de bewonersgroepen samen. Na de verkiezingen heeft Agalev elke samenwerking verbroken. Sedertdien is zo'n lamentabel milieubeleid gevoerd, dat wij ons niet meer tot de achterban van Agalev rekenen", zegt Fred De Baere.



De nieuwe oven van **Indaver** zal een capaciteit hebben van 466.000 ton per jaar. De te verbranden afvalstroom is niet zonder risico's: huishoudelijk én industrieel vast afval alsook slib van huishoudelijke én industriële waterzuiveringsinstallaties. De nieuwe oven komt naast de bestaande oven van **Indaver**, die een capaciteit heeft van 350.000 ton per jaar. Zo ontstaat er in Beveren een enorme verbrandingsconcentratie van 816.000 ton vast afval en slib per jaar.

Kan niet, zegt dokter Herman Viaene van de Gezondheidsinspectie. Krachtens het Vlaams Milieureglement behoort de zone Antwerpen inzake luchtvervuiling tot een speciale beschermingszone waarin de vervuiling moet worden beperkt of voorkomen. Door de uitstoot van zwaveldioxide door **Indaver** zal deze hinder vrijwel zeker toenemen. De perioden met schadelijke pieken worden vlugger bereikt en zullen langer duren. „Deze toenames zijn voor de volksgezondheid schadelijk en ontoelaatbaar“, aldus Viaene. Hij pleit voor de toepassing van het voorzorgprincipe.

In haar vergunning legt Dua, wat de lozingen betreft, alleen strengere normen op voor de stikstofdioxiden. Wat het agressieve zwaveldioxide betreft, deelt Dua de grote bezorgdheid van Viaene niet. „De berekende concentraties maken hooguit 11 procent uit van de richtwaarden van de Wereld Gezondheidsorganisatie“, aldus Dua.

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## **Adherents do not accept new incinerator**

**Nieuwkerken – The permit for the build of a new incinerator in Beveren is, for the “usual/natural” green supporters of the minister for Living Environment, Vera Dua (Agalev), the ‘drop that overflows the bucket’. The people concerned speak of “past adherents”. The new incinerator will be one of the largest in Vlaanderen and will be build next to an existing large incinerator. The locals appeal to the State Council.**

Unscrupulous. This is how the Vlamish Platform for Environment and Health describes the decision of the minister to not follow the negative advise of the Healthinspection. The State Council received a legal request for delaying and destroying the permit. The action has been initiated by the Platform and the Action Committee for Safeguarding the Living Environment on the Left Bank (ABLLO).

The Platform groups the “locals” who do not agree with the approach of the classical environmental movement. The approach of Dua (her environmental policy) is now added to that. “Before the elections, Agalev was working closely with the community groups”. After the elections, Agalev has terminated all cooperation. Her environmental policy is so appalling, that we no longer feel we belong to Agalev’s adherents, says Fred De Baere.

Indaver’s new incinerator will have a capacity of 466.000 tons annually. The waste to be burned isn’t without risks: domestic and industrial solid waste as well as mud from domestic and industrial water treatment installations. The new incinerator will be build adjacent to the existing Indaver incinerator. The existing incinerator has a capacity of 350.000 tons annually. This will create a massive incineration concentration in Beveren of 816.000 tons of solid waste and mud annually.

This isn’t possible, says doctor Herman Viaene of the Healthinspection. The Antwerp zone is part of a special safeguarding zone where pollution must be limited or prevented, according to the Vlamish Environmental regulations. The emissions of sulphur dioxide by Indaver will almost certainly contribute to the load. Periods with harmful peaks will be reached more quickly and will last longer. “These increases are harmful to public health and unacceptable”, says Viaene. He argues for the application of the precautionary principle.

Dua, as far as emissions are concerned, only applies stronger norms for nitrogen oxides in her permit. Dua does not share the serious concerns of Vianene as far as the aggressive sulphur dioxide is concerned. The calculated percentages make up 11 percent at maximum of the recommended values of the World Health Organisation, according to Dua.

## **Appendix 6 – Davis Country Incinerator News & EPA Factsheet**

[http://www.healutah.org/news/2002/january/wes\\_fined\\_1-02.html](http://www.healutah.org/news/2002/january/wes_fined_1-02.html)

### **Davis burn plant is fined \$1,098,954**

By Rob Rogers

Deseret News staff writer

LAYTON — After years of court wranglings and public protests, the Wasatch Energy Systems burn plant in Layton has been fined by the Utah Division of Air Quality for past air-pollution violations.

The plant was fined \$1,098,954 for three notices of violation that occurred in 2001. The incinerator's dioxin emissions had exceeded state limits. Dioxin is a carcinogenic by-product of burning trash.

The burn plant had received two notices of violation prior to 2001, and settlement of those violations led to smokestack scrubbers being installed at the incinerator. This is the first time a fine has been imposed on the burn plant.

The state division has been working with the U.S. Environmental Protection Agency and Wasatch Energy Systems for more than a year to decide the exact number and type of violations the burn plant has incurred, said Rick Sprott, Division of Air Quality director.

The EPA got involved in the fine process last year because it wasn't happy that instead of imposing a fine on Wasatch Energy Systems for the early violations, the division simply made it upgrade equipment, Sprott said. Burn-plant director Nathan Rich said he still has legal grounds to contend the violations but he won't. He said he feels it's more important to keep relations good with the state division and the community than to draw the process out any longer and get wrapped up in litigation.

"This facility is doing everything it can to rebuild trust with the community," he said.

Part of that rebuilding of trust comes in the form of supplemental environmental projects. Those are projects done within the community using part of the fine money to improve the damaged environment.

The Division of Air Quality, community members and leaders from Families Against Incinerator Risk have been meeting with the burn plant to put in place some specific projects.

### **Davis Incinerator to Pay First Cash Fine**

Thursday, January 17, 2002

BY KRISTEN MOULTON

THE SALT LAKE TRIBUNE

For the first time, the Davis County garbage incinerator will pay a cash fine -- \$201,000 -- for violating its air-quality permit, according to an agreement with regulators to be signed this week.

Wasatch Energy Systems, which runs the incinerator for Davis County's garbage district, also will spend \$420,000 on assorted environmental projects and has promised to pay \$477,680 if it violates its permit in the future.

Utah's Division of Air Quality (DAQ) considers the deal a \$1.1 million penalty against the Layton plant, which burns most of Davis and Morgan counties' garbage.

"It's fair to everybody," division director Rick Sprott said. "We feel pretty good that this facility has turned the corner and is really going to pay attention to environmental compliance. But we're not going to go away."

Nathan Rich, the plant's executive director, called the agreement "a first step in rebuilding the relationship" between Wasatch Energy and DAQ.

For years, Wasatch Energy was confrontational with regulators, contending the laws were unfair and refusing to acknowledge that it was spewing more pollutants from its stacks than permitted.

The plant's former executive director and manager were fired by the garbage district last summer and Rich, an engineer at the facility, was promoted on promises of mending the relationship with regulators.

"Long term, it's too much effort to try to operate a facility without a good working relationship," Rich said Wednesday.

Rich and district board chairman Jerry Stevenson, Layton's mayor, had been meeting with Sprott's staff since last summer to resolve the violations.

Sprott said the meetings were remarkable in one important aspect: no attorneys came along. "In the past, they were formal and very confrontational."

DAQ issued three notices of violation between March and May of last year. Included in those were numerous instances in which the burn plant exceeded its permitted amount of dioxin and hydrogen chloride emissions. There also were paperwork violations.

Sprott said about 85 percent of the fine, however, was due to excess dioxin emissions. Dioxins, a by-product of combustion, have been linked to cancer.

The burn plant has dramatically reduced its dioxin emissions with \$7 million in equipment installed last year. Stack tests in September and November showed emissions down 97 percent, well within the existing state permit level and future federal levels.

Wasatch Energy has installed a \$950,000 thermal oxidizer to capture and burn methane and other gases from the Davis County landfill. Of that, \$220,000 will be counted toward the \$420,000 in environmental projects required in the settlement.

The company also will pay for a \$100,000 study by a DAQ-hired consultant to help the plant improve its combustion practices, and will finance a \$50,000 DAQ project to sample soil for dioxin around the plant and in Layton.

Sprott said some of that money will be used to sample soil throughout Utah for dioxin levels, in part to gain a better idea of the existing levels of the toxin.

DAQ and plant officials plan to spend another \$50,000 on environmental projects sought by neighbors and critics.

Suggestions include planting trees around the plant or conducting a recycling and composting pilot project. Sprott plans to meet with residents to discuss their suggestions.

The U.S. Environmental Protection Agency's notice of violation is still pending, but Rich hopes the EPA will not pursue any action.

## **Board to keep Davis incinerator open Plant dangerous, costly, say some who live nearby**

June 7, 2001

By Brady Snyder

Deseret News staff writer

FARMINGTON — Davis County's embattled burn plant will keep on firing up its incinerator.

Against the wishes of three dozen residents who showed up for a public hearing Wednesday, Wasatch Energy Systems' Administrative Control Board passed its budget, including funding for the incinerator, for fiscal year 2002. The board is composed of Davis County commissioners, representatives from every Davis County city except Bountiful — which is not part of the garbage district — and one from Morgan city, also part of the district.

Residents showed up en masse to ask local lawmakers sitting on the board to reject the proposed budget. In its place they asked for a new budget that would allow Wasatch Energy — the special service district that burns garbage for 15 cities in Davis and Morgan counties — to shut down its garbage incinerator by the end of next fiscal year.

Residents complained that the plant is expensive — Davis County residents pay about 60 percent more for garbage collection than Salt Lake County residents — and some fear dioxin emissions from the plant are the cause of a brain-cancer cluster around the plant.

"This is a very unpopular operation," said Tom Uhland of South Weber. "You people need to start listening to the people and let your egos go to the side."

Despite the pleas, the board unanimously voted to keep the incinerator.

Board Chairman Jerry Stevenson said the group that gathered at the County Commission chambers for the budget hearing was a vocal minority spurred by environmental activists who have sought to close the incinerator for years.

Stevenson, who is also mayor of Layton, said he receives few incinerator-related complaints even though the plant sits in his city.

Activists and residents have long been critical of Wasatch Energy, which has regularly failed dioxin emissions tests in the past six years. Dioxin is a byproduct of burning trash, and the U.S. Department of Health and Human Services lists it as a "known human carcinogen."

Last month, Davis County Health Director Lewis Garrett announced that his office found evidence of a cancer cluster in and around South Weber. While there is no evidence linking the cluster to the incinerator, the discovery raised the ire of many already-skeptical residents. Last week Wasatch Energy asked for the resignations of its two top officials, executive director LeGrand Bitter and operations director Jack Schmidt.

New director Nathan Rich said Wasatch Energy will do everything possible, including lending money, to assist the health department in finding evidence that could help determine the cancer's cause.

Despite those promises the district's new budget called for a 47.5 percent decrease in funding for environmental testing and a 10.5 percent decrease in funds for professional consultation. In the past, Wasatch Energy has hired outside professional consultants to do its environmental testing.

## Brain-cancer cluster found

### Are the cases in S. Weber linked to Layton burn plant?

By Brady Snyder and Elyse Hayes

Deseret News staff writers

May 12, 2001

FARMINGTON — The Davis County Health Department has located evidence of a small brain-cancer cluster in and around South Weber.

While there is no evidence linking the cluster to the Layton burn plant, the study was initiated at the request of area residents who noticed an abnormally high occurrence of brain cancer around the garbage incinerator.

"I'm really glad that (the county health department) has actually carried through with this," said Layton resident Louise Love, whose father died of brain cancer last week. "It supports my theory exactly."

While the number of new cases seems small — nine in four years — county health officials say there are too many to write off as chance.

South Weber sits just northeast of the incinerator, which has frequently exceeded its dioxin emissions limits. Dioxin is a by-product of incineration and is listed as a "known human carcinogen" by the U.S. Department of Health and Human Services.

At a Davis County Board of Health meeting this week, county health director Lewis Garrett told board members he was "very concerned" with the increased number of brain cancer cases.

"We're taking this very seriously," he said.

Garrett says the number of reported brain cancer cases in ZIP code 84405 increased significantly in 1997, up from one case in 1996 to five cases in 1997.

The area, according to 1990 census data, includes 4,000 people and Garrett said it should average .2 occurrences of brain cancer every year. In 1998, the ZIP code had one new case of brain cancer and had two new diagnoses in 1999, bringing the total to nine new cases in four years.

"The numbers of cases went up so that it met the test of being statistically significant," Garrett said. "In other words, it doesn't look like it could have happened by chance alone."

The health department is awaiting cancer registry numbers from last year to see what is happening with the South Weber cancer trend.

"We're very anxious to see what it was in 2000," Garrett said.

University of Utah professors, along with the state health department, have looked at the numbers and cannot explain the high cancer rate, Garrett said.

While Garrett says he can't see any association between the brain cancer rate and the burn plant, he says he can't deny that there was a significant change in the number reported.

LeGrand Bitter, executive director of the incinerator, says there is little evidence linking the burn plant to the high brain cancer rates.

"South Weber is upwind from the facility," he said. "Our emissions just do not impact the city of South Weber."

The cancer cluster study was initiated a few months ago with the health department examining four ZIP codes around the garbage incinerator. Garrett said 84405 is the only one with abnormally high levels of brain cancer.

The specific cases in that ZIP code will probably be examined to see if a common link can be found among the afflicted. The age of people in the locale will also be weighed to see if people in the area are unusually old and thus more likely to contract brain cancer.

"It may mean nothing more than some random variation," Garrett said. "If there is some cause, however, we want to find it. The people in that area deserve to know if there's problem or not."

## **Residents Obtain Confidential EPA Memo Regional Toxicologist calls Davis Co. burn plant health risk study incompetent, inadequate.**

For Immediate Release: Thursday May 3, 2001 For More Information:  
Paulette Hidden (801) 479-0522  
Jason Groenewold (801) 364-5110

The Davis County garbage incinerator has failed smokestack emissions tests in 1997, 1998, 1999, 2000, and 2001. During this time, the burn plant had assured local residents that the emissions posed no harm to the surrounding community based on a health risk study that was conducted by one of their consultants. However, the Regional Toxicologist for the Environmental Protection Agency (EPA) questions their conclusions, according to a recently obtained confidential EPA memo.

"Much of what is presented in these brief documents, however, raise significant questions about the competency of the analysis," said EPA toxicologist Suzanne Wuerthele, Ph.D. in reference to the burn plant's study. "Due to this and other inadequacies, I cannot corroborate the conclusions drawn in the 'updated risk assessment', that 'there is no cause for concern' and that 'further analysis is not required'. On the contrary, the information in the [study] suggest risks high enough to trigger additional gathering of information at the facility."

The burn plant, operated by Wasatch Energy Systems, has come under much scrutiny by local residents who are concerned about the cluster of brain cancers and other illnesses they see in neighborhoods surrounding the burn plant. The burn plant releases cancer causing and other toxic chemicals from their smokestacks which include dioxins, mercury, and arsenic. Dioxins have been rated by the US Department of Health and Human Services as a known carcinogen, and have been linked by the EPA to causing birth defects, suppression of the immune system, and reproductive disorders.

"The responsible civic action is to shut down the burn plant," said Dr. James Lombardo, one of numerous physicians in Davis Co. who believe the burn plant poses an unacceptable risk to public health. "Our children deserve a healthy environment."

Dr. Lombardo pointed out that if the burn plant were shut down, not only would it allow Davis Co. residents to breathe cleaner air, but they would also save money.

Dr. Lombardo referred to a

1995 study conducted by the consulting firm Roy Weston which showed that it would be

(more)

considerably cheaper to shut the plant down than to keep it operating. Even though the burn plant commissioned the study, they did not follow its recommendations.

The burn plant has argued that they are installing new pollution control equipment that will reduce the amount of pollutants that are being released from their smokestack. However, they have admitted they are not sure if this new equipment



will meet the new standards that are being established by the EPA. Therefore, the burn plant is using tax payer money to sue the EPA to relax the standards that were promulgated in November of 2000. The new emissions limits would apply to the 90 existing waste-to-energy units and incinerators in the US. The new standards require the burn plant to emit under 60 nanograms per dry standard cubic meter (ng/dscm) of dioxin. The burn plants current permit allows WES to release 360 ng/dscm, but their emissions tests have been as high as 1,100 ng/dscm for dioxin.

"It is bad public health policy and it is bad fiscal policy to continue to burn trash in densely populated Layton," said Dr. Lombardo. "Let's quit throwing good money after bad and do the right thing as a community: Let's shut down the burn plant!"

###

Please contact FAIR at (801) 364-5110 for a copy of the EPA memo or the "Solid Waste Alternatives Analysis: Waste-to-Energy and Disposal Alternatives, Costs and Assumptions

### **EPA criticizes dioxin study**

By Brady Snyder

Deseret News staff writer

May 14, 2001

LAYTON — The Davis County garbage incinerator is inaccurately downplaying the health risks of its dioxin emissions, according to a confidential Environmental Protection Agency letter.

The anti-incinerator group Families Against Incinerator Risk released the EPA letter that criticizes a health-assessment study commissioned by the burn plant.

Operated by Wasatch Energy Systems — the special service district that burns trash for 15 cities in Davis and Morgan counties — the incinerator has failed emissions tests in five straight years. During that time, incinerator officials have assured local residents that the emissions violations posed little threat to the local community.

The assurances are based in part on a health-risk assessment conducted by out-of-state consultant Rigo & Rigo.

The Rigo study concluded that "there is no cause for concern" about the incinerator's dioxin emissions and that "further analysis is not required."

But Suzanne M. Wuerthele, regional toxicologist for the EPA, said in a letter that the Rigo study was too piecemeal to make such sweeping assertions.

"Much of what is presented in these brief documents, however, raise significant questions about the competency of the analysis," the letter to EPA attorney Wendy Silver states. "Due to this and other inadequacies, I cannot corroborate the conclusions drawn. . . . On the contrary, the information in the (Rigo study) suggests risks high enough to trigger additional gathering of information at the facility."

The Rigo study examined soil and milk samples from the area to determine whether dioxin concentrations were greater around the incinerator than in other areas.

Wasatch Energy Systems' attorney Larry Jenkins said the initial screening was a "pretty good indication of things" and that no further tests are needed.

Dioxin is a by-product of burning trash, and the U.S. Department of Health and Human Services lists it as a "known human carcinogen." The EPA has linked dioxin to birth defects and immune-system suppression.



"We don't know, nobody knows what the risks of dioxin are," Jenkins said. The incinerator, he added, is "as safe as any other dioxin emitters in Davis County." Plant officials are spending \$7 million on pollution-control equipment that is expected to be in place this year. The goal is to reduce dioxin levels below new federal standards that will take effect in about four years.

"Dioxin is a concern and we're getting a handle on it," Jenkins said.

Residents living in the incinerator's shadow have asked the Davis County Health Department and the state department of epidemiology to examine what residents feel is a high amount of brain cancer in the area.

The newly discovered letter fueled the ire of many incinerator opponents, including Dr. James Lombardo, one of numerous Davis County physicians who believe the plant poses an unacceptable risk to public health.

"The responsible civic action is to shut down the burn plant," Lombardo wrote in an e-mail sent to the Deseret News on Thursday. "It's bad public health policy and it is bad fiscal policy to continue to burn trash in densely populated Layton."

"I don't know that he's a qualified expert to say that," Jenkins said. "I think it's safer to deal with municipal solid waste this way than to put it in a landfill" — an assertion Jenkins said is in line with the EPA's approach.

State toxicologist Steve Packham said that while the Rigo study was only a sampling, it did offer some assurances that dioxin levels in the area are not higher than in other Wasatch Front localities. Packham said that while more extensive studies could reach more conclusive findings, those studies would be costly and probably aren't warranted given the Rigo study's results.

## **Burn plant flunks more state tests Layton facility exceeds dioxin, monoxide limits**

By Brady Snyder

Deseret News staff writer

April 10, 2001

LAYTON — Division of Air Quality officials issued a notice of violation Monday to Wasatch Energy Systems for exceeding dioxin and carbon monoxide emission limits and failing to give reasons why.

From Jan. 1, 1999, to Dec. 31, 2000, Wasatch Energy — the special service district that incinerates trash at the Layton burn plant for 15 cities in Davis and Morgan counties — exceeded carbon monoxide emission limits for 766 four-hour periods, according to the notice of violation. Additionally, Wasatch Energy is accused of failing to provide narrative descriptions detailing reasons for 2,979 instances of excess emissions during the same period. Some of the alleged excess emission readings were for carbon monoxide and sulfur dioxide.

But most disturbing to the DAQ are the excess dioxin emissions. During annual testing, from Oct. 10-14, the plant emitted 540 nanograms of dioxin per dry standard cubic meter, 50 percent more than allowed under its permit.

"Dioxin is considered one of the most serious environmental pollutants because it can cause a variety of health effects, including effects on endocrine and reproductive systems," DAQ toxicologist Steve Packham said in a written statement Monday. The Environmental Protection Agency is reviewing all possible health effects of dioxin, including its cancer-causing potential in people.

In January, the U.S. Department of Health and Human Services upgraded dioxin to a "known human carcinogen," intensifying fears of residents and activists who have long worried that the chemical is hazardous to communities.

Monday's notice also breaches a settlement agreement Wasatch Energy had arranged with the

DAQ after previously exceeding its allotted dioxin limits. In total, the plant has failed four of its past eight dioxin tests. After failing its 1999 test, incinerator officials agreed to install dioxin-control measures, effective October 2002.

Under the settlement, plant officials also agreed to not exceed their allotted dioxin emissions while the control measures are being implemented. DAQ director Rick Sprott said the state will consider what penalties the plant will face for its mounting violations and for breaching the settlement. By law, the state could fine Wasatch Energy up to \$10,000 per day for each violation.

"It's pretty frustrating for Wasatch Energy and us," Sprott said. "We're trying to get to the bottom of this thing. We'll have to work through this."

Monday's notice comes less than a month after Wasatch Energy received a notice of violation for exceeding hydrogen chloride emissions. Wasatch Energy attorney Larry Jenkins said he is debating the accuracy of the hydrogen chloride tests and notes that all excess emissions will be hugely reduced when the plant's new control systems come online on or before October 2002.

**Davis County Municipal Waste Incinerator  
Fact Sheet  
Utah Department of Environmental Quality**

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**Facility Identification**

**Pollution Standards and Regulations**

**Summary of State Regulatory Actions**

**Review of health impact from dioxin/furans**

**Current Issue of a Dioxin Variance**

**Contacts for Further Information**

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**Facility Identification:**

A municipal waste incinerator located at 650 East Highway 193, Layton Utah, operated by Wasatch Energy System (WES) in and for the County of Davis.

**Pollution Standards and Regulations:**

***Approval Orders (permits):***

Air pollution from a variety of sources, including municipal waste incinerators, is regulated in Utah through Approval Orders. The Davis County incinerator has been operated under *eight sequential approval orders* beginning in 1984.

***Dioxin/Furan Limit:***

The current Approval Order for WES was issued September 6, 2000 and sets a dioxin limit of 360 *ng/dscm*. New *federal rules*, to be generally applicable to facilities such as WES in 2005, have a dioxin/furan limitation of 60 *ng/dscm*.

**First Stipulation and Consent Order (September 16, 1998):**

WES and the Utah Air Quality Board entered into a Stipulation and Consent Agreement that effectively resolved penalties previously assessed for violations of pollution limits. Dioxin testing of soil and goat's milk was carried out as partial fulfillment of this Order.

**Second Stipulation and Consent Order (March 27, 2000):**

In September 1999 WES conducted tests which measured dioxin/furans levels of 1101.1 *ng/dscm*. WES was assessed a penalty of \$38,000 for this and other violations. In settlement of those violations WES and the Utah Air Quality Board entered into a Stipulation and Consent Order in which WES agreed to implement the new federal dioxin/furan limits by October 6, 2002 - about three years ahead of the EPA time-table.

### **Summary of State Regulatory Actions:**

Records at the Division of Air Quality show *seven Notice of Violations* issued between 1989 and 1999, and eleven since the facility began operations in 1984.

### **Review of health impact from dioxin/furans**

A multi pathway risk assessment was performed for WES by a consulting firm Rigo and Rigo in 1996. The results of that study failed to show likely harm from dioxin/furans released from the facility if it operated within the conditions of the Approval Order. EPA is now reviewing that study and may determine that the study alone is insufficient to prove that the facility is safe.

As a hedge against the questionable validity of the risk study the state required dioxin testing in soil and goat's milk collected near the facility as part of the first Stipulation and Consent Order. All but one of those samples showed dioxin levels below what is considered background; i.e., 50 parts-per-trillion in soil.

### **Current Issue of a Dioxin Variance:**

On or around September 26, 2000, the EPA, pursuant to provisions in Section 114 of the Clean Air Act, advised WES that EPA would require dioxin testing every five weeks until "...the EPA notifies WES that test may cease." The objective of this requirement, as stated by the EPA is "...to determine compliance by WES with provisions of the Clean Air Act..." including the conditions of the current Utah Approval Order.

WES has taken two actions in parallel; they have challenged the EPA '114' request and they have petitioned the Utah Air Quality Board for a variance of the 360 ng/dscm condition of the Approval Order. The Board may be reluctant to grant such a variance given the toxic nature and environmental persistency of dioxin/furans. but would like to have confirmation that the facility is operating in compliance with its Approval Order. In this matter, the State is not convinced that direct dioxin/furan testing is the only way to establish that compliance, and the State is working with EPA and WES to resolve these varying points of view.

Both EPA and the State want to be assured that the lowest possible emissions of dioxin are achieved and maintained between now and the accelerated implementation of the federal dioxin/furan limits, a time period of about 18 months. The State believes this can best be accomplished through verifying *good combustion practices* at WES. The State intends to propose monitoring and controlling post-combustion CO levels as a means of enhancing and verifying good combustion practices thus reducing the need for so frequent dioxin tests. At issue is 1) how many dioxin/furan tests need to be performed to confirm the effectiveness of good combustion practices and 2) the nature of assessing penalties in the event that additional dioxin/furan tests show the facility out of compliance.

## Contacts for Further Information

Rick Sprott (Director) 801-536-4151  
Reg Olsen (Approval Orders) 801-536-4165  
Marv Maxell (Compliance) 801- 536-4082  
Steven Packham (Health and Risk) 536-4036

## LINKED GLOSSARY OF TERMS

**Approval Orders (permits).** Facilities obtains “approval” to operate contingent on meeting certain specific requirements designed to limit pollution and protect the environment. State Approval Orders are drafted and approved following public review and comment. Approval Orders will always include applicable federal standards. In the absence of federal standards the state establishes conditions of approved operation based on environmental, health and economic considerations. Municipal waste incinerators will be regulated by federal standards beginning in 2005.

**eight sequential approval orders:** The facility was built per notices of intent submitted on 2/17/1983, 10/25/1984, 12/9/1986, 6/10/1988/ and 10/26/1993. It has operated under conditions of eight sequential Approval Orders issued on the following dates:

02/24/1984  
12/18/1984  
06/03/1986  
10/13/1986  
02/26/1987  
10/07/1988  
07/15/1996  
09/06/2000

**Dioxin/Furan Limit:** The dioxin/furan limit in effect at the facility now (and since 1993) is 360 ng/dscm. This limit was based on results of dioxin/furan tests conducted in 1993 while the unit was operating under **good combustion practice**.

**ng/dscm:** The term ng/dscm is an expression of concentration; i.e., **nanograms** (1/1,000,000,000 of a gram) of dioxin/furans in one **dry standard cubic meter**.

**federal rules:** EPA proposed regulations (Federal Register, Vol. 64, No. 167, Subpart BBBB, August 30, 1999, pp 47234-47274) which requires facilities such as WES to meet a new dioxin/furan limit of 60 ng/dscm by 2005.

### **seven Notice of Violations:**

- (1) July 1989 (lime injection problems), a penalty was assessed.
- (2) January 1990 (system audit found strip-chart records missing), a penalty was assessed
- (3) February 1991 (hydrogen chloride, CO, and SO<sub>2</sub> exceedances), a penalty was assessed
- (4) May 1991 (CO and SO<sub>2</sub> exceedances), a penalty was assessed
- (5) June 1997 (hydrogen chloride exceedance and failure to test for dioxin) resolved through the first Stipulation and Consent Order
- (6) October 1997 (hydrogen fluoride and dioxin exceedances), resolved through the first Stipulation and

Consent Order

(7) September 1999 ( cadmium and dioxin exceedances), resolved through the second Stipulation and Consent Order

**good combustion practices:** Dioxin/Furan formation in incinerator, waste heat boiler and controls will be minimized through good combustion practice. Good combustion practice as defined by the EPA includes limits on steam production, carbon monoxide emissions and inlet temperature to particulate matter control device. The current Approval Order establishes limits on each of the good combustion practice parameters. Dioxin/furan emissions will be minimized by enforcement of the current permit limits.