

Two Incinerators for Cork Harbour

Toxic & Household

Facts – Issues – Concerns

Health & Environment

Food & Farming

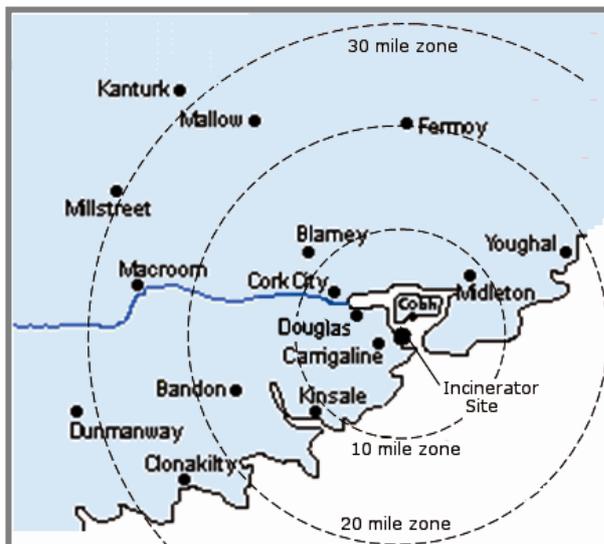
Democracy

Planning & Licensing

Site Unsuitability

Guidelines & Policies

Public Safety



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Introduction

In November 2001, Indaver (Ireland) Ltd applied for planning permission for a Hazardous Waste Incinerator at Ringaskiddy, Co. Cork. In April 2003, they applied for a licence to operate TWO incinerators at Ringaskiddy – one toxic, one household.

All these years and two oral hearings later, the concerns of Cork Harbour residents have still not been addressed. Our questions about health and the environment, public safety, site suitability, and many other issues remain unanswered.

- ~ Local and national plans have been *contravened*
- ~ International guidelines *misinterpreted*
- ~ Local government and planning inspector decisions *overturned*
- ~ Scientific evidence *disregarded*
- ~ Public health and safety *discounted*
- ~ And the views of over 30,000 people and their public representatives *ignored*.

Allowing this development to go ahead represents a clear failure of the democratic process.

CHASE's message is simple.
The proposed incinerator plant is . . .

~ UNNECESSARY ~

There are safer, better ways of dealing with our waste.

~ UNSAFE ~

It is a risk to public health & safety;
Pollution from the process can cause birth and heart defects,
learning difficulties in children, cancers and respiratory problems.

~ UNACCEPTABLE ~

30,000 people said NO to planning permission;
Cork County Council REFUSED planning permission;
One of Ireland's senior planners gave 14 reasons why it should
NOT BE BUILT.

Planning - Democratic Process Has Failed

Local, Regional, and National plans disregarded

The development of our region is governed by a collection of strategies and plans drawn up in consultation with us, the people, and our elected representatives.

Developing these strategies and plans takes much time and tax-payers money, and each represents a contract with the people of Cork. But what use are these contracts when a commercial company can build an incinerator for commercial gain contrary to the letter and spirit of our development and waste management plans?

Cork County Development Plan 2003	Proposed development materially contravenes Plan.
Cork Area Strategic Plan	Makes no provision for an incinerator in Cork Harbour. Instead, talks about eliminating dirty industry and developing Cork Harbour for leisure, recreation, and education.
Cork County Waste Management Plan	Makes no provision for incineration.
National Hazardous Waste Management Plan	Primary objective is Waste Prevention. Secondary objective is to manage any hazardous waste "which cannot be prevented".

An Bord Pleanála inspector's report overturned

Cork County Council refused permission for the development as it would:

"materially contravene the County Development Plan 2003"

On appeal to An Bord Pleanála, and after an exhaustive Oral Hearing, An Bord Pleanála's senior planning inspector recommended refusal on FOURTEEN grounds. Despite these seriously prejudicial findings, An Bord Pleanála overruled their Inspector and granted permission for the development.

The inspector's reasons for recommending refusal can be summarized as follows:

Inadequate EIS	The EIS (Environment Impact Statement) is inadequate and legally invalid.
Contrary to National Policy	The development is contrary to National Hazardous Waste Management Plan: <ul style="list-style-type: none">~ With waste prevention as the top priority and first step in the Plan, it is premature and would tend to inhibit achievement of waste prevention targets.~ Its scale is considerably in excess of that envisaged for thermal treatment in the Plan.~ There is no concurrent or prior provision for landfill of hazardous waste generated by the incinerator, as envisaged in the Plan.

Contrary to County Policy	<p>Cork Waste Management Plan makes no provision for incineration of hazardous or non-hazardous waste.</p> <p>Cork County Development Plan 2003 precludes contract incineration anywhere in the county, recommends Ringaskiddy for port-related use, and aims to preserve the views from scenic routes in Monkstown and Cobh.</p>
Site significantly unsuitable	<p>The site's topography, climatic conditions, geology, hydrology, and the risk of erosion and flooding make it fundamentally unsuitable for the proposed development.</p> <p>Its proximity to high density housing would be seriously injurious to residential amenity.</p> <p>At the end of a peninsula, with a single access road, the excessive increase in traffic would be prejudicial to public safety and amenity.</p>
Inadequate road infrastructure	<p>The development would endanger public safety by reason of serious traffic hazard and obstruction of road users.</p>
Risk to public safety	<p>With the proximity to the National Maritime College and other Seveso II plants, the inadequacy of emergency infrastructure, and a location at the end of a peninsula, the development could pose significant risks to public safety in the event of a major accident.</p>

Health and environment excluded from planning process

No submissions or objections relating to the risk of environmental pollution were considered by An Bord Pleanála's Oral Hearing. This prevented any exploration of the effects of routine or accidental emissions on the environment, on the population's health, or on the food chain, and didn't allow discussion of relevant medical and scientific evidence.

Why? An Bord Pleanála determined that the planning application fell under the 1963-1999 Planning & Development Acts and not the current 2000 Act. If the application had been submitted some 6 weeks later, environment pollution and health issues could have been investigated. Could Indaver have withdrawn and then resubmitted their application so that these issues could be considered? Yes!

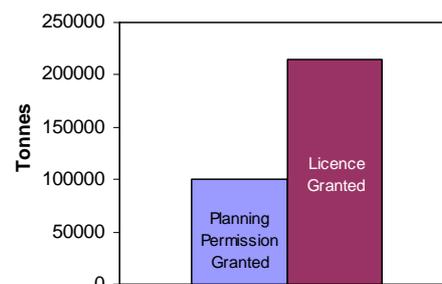
However, despite not being able to take these vital issues into consideration, the Oral Hearing Inspector still found FOURTEEN substantial reasons for recommending planning refusal.

Second incinerator licensed without planning application

An Bord Pleanála granted planning permission for a single 100,000 tonnes hazardous waste incinerator. However, the EPA have issued a licence for burning of up to 215,260 tonnes, in TWO incinerators.

Judicial review

In January 2005, a High Court judge found that there were "significant grounds" for a judicial review of the planning permission for the Ringaskiddy toxic waste incinerator, and this case is expected to be heard in the near future.



Health Hazards Ignored

What incinerators produce

Incineration does not destroy waste – it merely converts it to other forms, such as:

- ~ stack gases, minute dust particles, and ash.

All these contain pollutants that are harmful to our health. *That is why they are regulated.*

Emissions from incinerators include: dioxins, PCBs, and heavy metals (lead, arsenic, cadmium, etc.). All of these are persistent, bioaccumulative and toxic.

Known health risks

DIOXINS and PCBs: These toxic chemicals can have severe health effects. The most vulnerable to the damaging effects are the developing foetus, breastfeeding infants and young children.

Known health effects include: cancer, impairment of the immune, hormonal, and reproductive systems, congenital abnormalities, delayed cognitive and motor development in children, disruption of critical stages of embryonic development.

PARTICULATES: Incinerator emissions include fine particles or particulate matter (PM). The tiniest of these (PM_{2.5}) cannot be trapped by filters in the incinerator stacks and are the most dangerous because they penetrate more deeply into the lungs. Because of their tiny size they also travel farther and persist longer in the atmosphere than larger particles (PM₁₀).

According to the World Health Organisation (WHO): “PM_{2.5} seriously affects health, increasing deaths from cardiovascular and respiratory diseases and lung cancer.” And a recent report on the health effects of incinerators concluded that:

“Incinerators are in reality particulate generators, and their use cannot be justified now that it is clear how toxic and carcinogenic fine particulates are.”

No medical evidence for safety of incineration

All the medical evidence presented at the Bord Pleanála and EPA oral hearings was unequivocal in its support for CHASE’s opposition to the proposed incinerators. The medical witnesses included:

- ~ Dr. Gavin Ten Tusscher, Paediatrician, University of Amsterdam, and member of EU technical group on bio-monitoring of children.
- ~ Dr. Vyvyan Howard, Toxicologist, Liverpool University.
- ~ Dr. Anthony Staines, Epidemiologist, Senior Lecturer, UCD.

Adverse health effects at levels below EU limits

At the EPA oral hearing, Dr. Gavin ten Tusscher testified that he and his medical colleagues are seeing adverse health effects in patients with less than the level of exposure deemed tolerable by EU standards.

Indeed the latest information from the WHO is that, for some incinerator emissions, there are no known safe levels.

Inadequate and deficient health monitoring facilities

In 2003, the Health Research Board (HRB) published a government-commissioned report which concluded that:

- ~ Ireland has insufficient resources to carry out adequate risk assessments for proposed waste management facilities.
- ~ Irish health information systems cannot support routine monitoring of the health of people living near waste sites.
- ~ There is a serious deficiency of baseline environmental information in Ireland.

The EPA Director brought these points to the attention of the Dept. of Health and stated that "the issue of adequate health information systems" was a matter for the Dept. of Health and the Health Boards. How can the EPA warn of the lack of health information and monitoring systems on the one hand and assure us that the facilities at Ringaskiddy will not endanger human health on the other hand?

In addition, Dr. Anthony Staines, one of the authors of the HRB report, reiterated these findings at the EPA oral hearing and concluded that:

"The proposed development requires a proper Health Impact Assessment to ensure reasonable consideration of human health issues. The material provided in Indaver's EIS falls short of any reasonable estimate of what is required."

Health and environment fall between many stools

Is anybody responsible for monitoring the health of people living near the proposed incinerator? Is anybody responsible for investigating the effects of its emissions on the environment? The answer would appear to be: NO!

Planning authority	<i>Not the competent authority.</i> Precluded by 1963-1999 Planning & Development Acts.
An Bord Pleanála	<i>Not the competent authority.</i> Precluded by 1963-1999 Planning & Development Acts.
Health and Safety Authority (HSA)	<i>Not the competent authority.</i> Responsible for health and safety in the work place and also for impacts of Seveso sites in terms of major accident hazard. But <i>not</i> responsible for the long-term effects of releases in the event of an accident.
EPA	<i>Not the competent authority.</i> Responsible only for ensuring that emissions are within permitted limits.
Health Service Executive	<i>Not the competent authority.</i> Responsible for community health only in relation to vaccinations, prevention programmes, and so on.

Who's responsible for our health?

~~CCC~~ ~~ABP~~ ~~HSA~~ ~~EPA~~ ~~HSE~~

Agri-Food Business Vulnerable

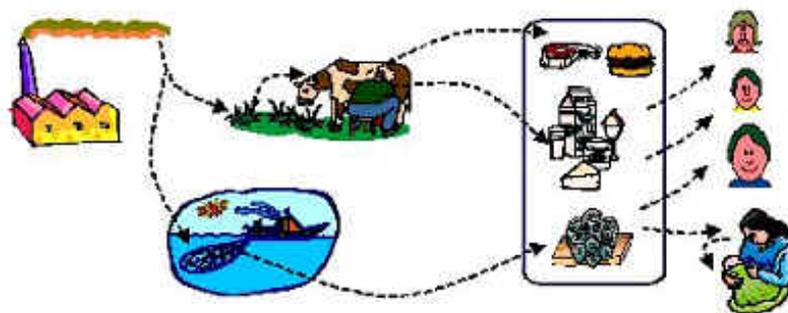
Ireland's current reputation as a food producer

Food production is highly important to Ireland's economy – Irish agri-food exports are worth €7bn annually.

We have a reputation for home produced, natural, fresh foodstuffs. The fact that we have the lowest levels of dioxin in Europe undoubtedly gives us an advantage over other European countries. Do we want to lose out on this advantage to rival countries, such as New Zealand, who have adopted alternative waste management strategies?

Incinerator pollutants can contaminate the food chain

The fallout zone for incinerator emissions extends to a radius of 30-40 miles. But by far the greatest risk of exposure to dioxin is through the food we eat.



Dioxin from incinerator emissions settles on vegetation, in soil, and in the oceans, and so enters the food chain. Foods which tend to have the highest dioxin levels include dairy products, meat and poultry, eggs, fish and animal fats.

Dioxin contaminations cost money and reputation

The Belgium 'dioxin crisis' of 1999 provides a salutary lesson. The Belgian food industry was badly damaged when high levels of dioxin were discovered in eggs and chickens and traced back to dioxin contaminated animal feed. Import bans by countries worldwide included chicken, eggs, meat, and any products containing eggs or milk. The Belgian government estimated the cost of the crisis at €465 million.

In November 2004, dioxin contamination of animal feed caused the closure of more than 160 farms in the Netherlands and Belgium, and in February 2006 China and Taiwan banned pork from three European countries over a dioxin scare.

Examples of incinerator effects on the agri-food industry include:

- ~ **Cluny, France:** Munciple incinerator closed down due to the contamination of goat grazing areas by dioxin emissions from the incinerator. Cheese found to have dioxin levels in excess of French and EU safety limits.
- ~ **Kirkland Lake, Ontario, Canada:** Halton Flour Mill and Dover Flour both threatened to discontinue purchasing wheat in the area if a planned hazardous waste incinerator went ahead.
- ~ **Hull, UK:** Cadbury UK have stated in writing that they will not purchase cocoa from a cocoa mill next to a proposed incinerator.

Alternatives for dealing with animal and food waste

In relation to farm waste, incineration is NOT the solution. Newer, cleaner and safer technologies are now available – in particular, Alkaline Hydrolysis and Anaerobic Digestion. In a recent report the EPA declared anaerobic digestion a win-win solution for farming, our Kyoto targets and the environment.

Site Unsuitability Disregarded

Irrespective of the pros and cons of incineration in general, some sites are objectively unsuitable for such activities. And Ringaskiddy is clearly one such site, as concluded by the ABP Oral Hearing Inspector:

"the proposed site ... is objectively unsuitable to accommodate the proposed development."

A whole book could be written on why the Ringaskiddy site is unsuitable for an incineration plant. If international guidelines on site selection had been correctly adhered to, the site would have been excluded from consideration on a first pass. Here are just some of the reasons why the site is unsuitable.

Flooding

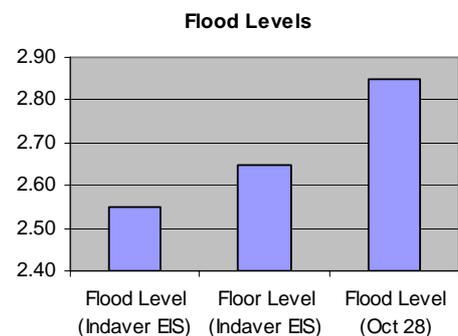
According to WHO guidelines, sites with a history of flooding every 100 years or less and sites subject to storm encroachment should be excluded from consideration when siting a hazardous waste incinerator.

The Oral Hearing Inspector was satisfied that there is a risk of flooding at the Ringaskiddy site and this was demonstrated vividly in October 2004 when storms and high tides left the site submerged in water.

In their Environmental Impact Statement (EIS) Indaver give a ground floor level of 2.65m Ordnance Datum (OD) and a flood level of 2.55m OD.

A difference of only 0.1m between floor level and flood level is extraordinary in itself. But during the 2004 flooding, flood water levels were at 2.85m OD (engineer's report). This is 0.2m above Indaver's stated floor level and 0.3m above their flood level figures. And the 2004 tides were not even the highest in the last 100 years.

In light of this new data, which simply confirms what local residents already knew, surely the suitability of the site should now be reassessed.



Coastal erosion

The risk of flooding and erosion is one of the 14 reasons that the Inspector gave for recommending refusal of planning permission.

Evidence was put forward at the ABP Oral Hearing that the incinerator site is subject to erosion from the seaward side. The Inspector visited the site and was satisfied that this is the case ("there is a very real danger of erosion of the eastern side of the site in storm conditions").

Moreover, an EPA document published in 2003 ("Climate Change: Scenarios and Impacts for Ireland") advised that development should be curtailed in areas that are at risk of erosion arising from more frequent storm weather conditions. And Cork Harbour was specifically identified as being under threat.

Again, why is this evidence being ignored by the competent authorities?

Adverse climate conditions

WHO and Basle Convention guidelines expressly state that incinerators should not be sited where atmospheric conditions would prevent safe dispersal of emissions.

One of the WHO's criteria for excluding a site specifies:

"Atmospheric conditions, such as **inversions** or other conditions that would prevent the safe dispersal of an accidental release."

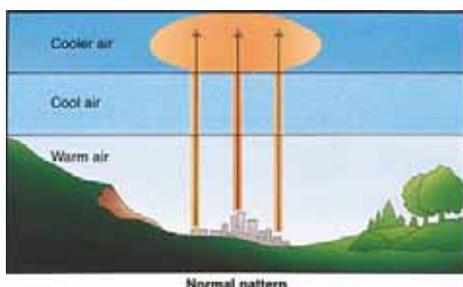
The BASEL Convention Technical Guidelines state that sites should:

"lie within a topography that will permit effective and rapid atmospheric dispersion."

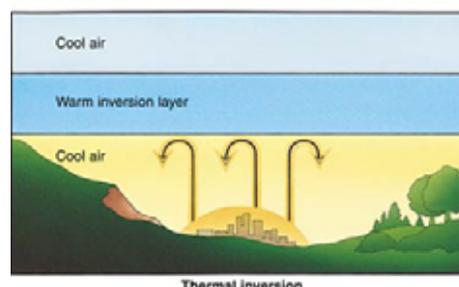
The European Commission Manual on Environmental Integration states that it is:

"important to avoid locating an incinerator upwind of residential areas, in enclosed air-basins".

So it's clear that areas which experience thermal inversion should be excluded from consideration when siting an incinerator. Cork Harbour *regularly* experiences thermal inversions. Pollutants released under these conditions will be trapped in the harbour area, contaminating living organisms, air, soil, and the food chain.



Thermal inversion occurs when a layer of warm air settles over a layer of cooler air that lies near the ground. The warm air holds down the cool air and prevents pollutants from rising and scattering.



Why was this not considered in Indaver's EIS? Because the model used to predict the impact of emissions was based on meteorological data from Cork Airport, which is more than 8 miles away, 100m higher, and rarely experiences thermal inversions!

Had Indaver gone no further than applying the exclusion criteria in the WHO guidelines, nowhere in Cork Harbour would have even been considered, let alone shortlisted, for the proposed incinerator.

Proximity to sensitive installations and populations

Again, WHO guidelines exclude sites close to:

- ~ Sensitive installations, such as those storing flammable or explosive materials.
- ~ Stationary populations, such as those of hospitals and correctional institutions.

Should the Ringaskiddy site be excluded under these criteria? The answer is obvious!

- ~ There are already Seveso II plants in Ringaskiddy, that is, "plants where dangerous substances are present" (Seveso II Directive). Are these not sensitive installations?
- ~ At the time of the ABP Oral Hearing, Spike Island was the location of a medium-security prison – surely, a stationary population. The prison is currently closed, but plans are in progress to build a new prison on the site to replace Cork Prison.
- ~ The new National Maritime College (800+ people) is directly across the road from the incinerator site, its entrance only 20m from the site boundary.

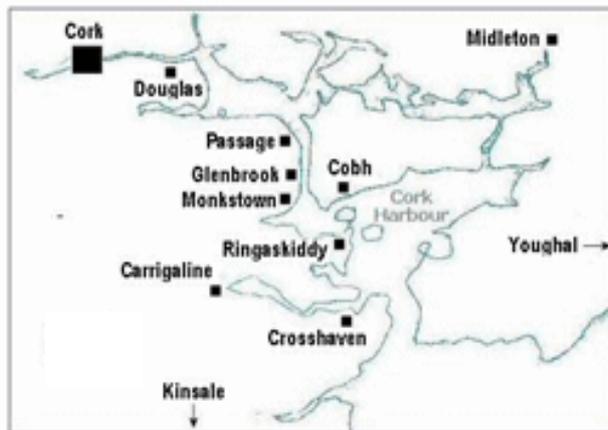
At the ABP Oral Hearing, County Planning Officer Mr. B. Kelleher said that planning for residential accommodation at the college had been refused in part because the Council were aware of the upcoming application for the incinerator plant.



Entrance to Maritime College on left; incinerator site on right.

One of Indaver's own reports states that: "In the case of a pool fire over the bunded area, the resulting heat radiation at 200m (the distance from the Tank Farm to the edge of the proposed Naval College) would be 5kw/m which would be sufficient to cause 2nd degree burns after 40 seconds exposure"

- ~ Ringaskiddy village is within 5 minutes walk of the site.
- ~ Hawlbowlne Naval Base (1000 personnel) is less the ½ km from the incinerator site. An accident at the incinerator could block the only access road to the base.
- ~ 15000 people live in Cobh and Great Island, only 2km away and downwind of the site. A single, hump-backed bridge links the island to the mainland, providing the only escape route in the event of an accident at the incinerator. And even this route was blocked by flooding during the storms of October 27/28 2004.
- ~ Carrigaline, Crosshaven, Monkstown, Passage West, Raffeen, Aghada, Whitegate, and many other towns and villages are situated between 3 and 10km of the site. Cork City Centre is only 12km from the site – well within the fallout zone for incinerator emissions.



Proximity to other Sevesco II establishments, to the National Maritime College, and to densely-populated residential areas were all reasons why the Oral Hearing Inspector recommended refusing planning permission. An Bord Pleanála granted planning permission regardless.

Inadequate road infrastructure, emergency plan, escape routes

The incinerator site is located at the end of a peninsula on the same cul-de-sac as Ringaskiddy village, the National Maritime College, and the Hawlbowlne Navy Base.

The National Roads Authority acknowledges that the road infrastructure in the area is inadequate. The Oral Hearing Inspector considered that the increased traffic associated with the incinerator plant would "endanger public safety" and constitute a "serious traffic hazard".

There is no emergency plan for the people of Ringaskiddy in the event of a major accident. A similar problem arises for the people of Cobh and Great Island, where there is also only one way in and out.

Cork City is the closest full-time fire station to Ringaskiddy. The predicted response time in the event of an accident at the site is 26 minutes – a lot can happen in half an hour.

If a fire occurs when the wind is coming from the East, access to the incinerator site would be blocked and evacuation of the Naval Base and Naval College impossible by land.



Fire at Hazardous Waste Incinerator in Argentina (2004)

Hazardous Waste Figures Misrepresented

The oft-stated reason for selecting Ringaskiddy for a national hazardous waste incinerator is that Co. Cork generates 60% (115,000 tonnes) of Ireland's hazardous waste. While this is true, the amount generated is NOT the same as the amount available to the proposed incinerator – our national plan states that the latter is intended only for:

"hazardous waste that is currently exported for incineration".

So what are the true facts and figures?

Cork accounts for small % of hazardous waste exported for disposal

- ~ Two-thirds of the hazardous waste generated in Co. Cork is dealt with by inhouse incinerators. Only one-third is exported.
- ~ Of the waste exported, approx. 83% is sent for recovery and about 17% for disposal (eg. incineration).
- ~ So only about 6,500 tonnes of the hazardous waste generated in the county will be available to the proposed incinerator.
- ~ Nationally, about 48,000 tonnes of hazardous waste is exported for disposal per annum.



In this context, the proximity principle would surely exclude a site on a cul-de-sac, at the end of a peninsula, at the extreme southern end of the country.

Plant overcapacity

In addition, irrespective of the proximity principle, the proposed incinerator is clearly over capacity:

- ~ The proposed incinerator has a capacity for in the range 80,000 – 126,000 tonnes.
- ~ Nationally, about 48,000 tonnes of hazardous waste fits into the category of "hazardous waste that is currently exported for incineration" (EPA report) – this indicates 40-62% overcapacity.
- ~ The target in our National Hazardous Waste Management Plan is to reduce the quantity of hazardous waste for disposal to 1996 levels (about 27,000 tonnes) – this indicates 66-79% overcapacity.

Public Safety In Jeopardy

The Health and Safety Authority (HAS) has responsibility for workplace health and safety and for ensuring public safety under the EU Directive on Major Accident Hazards (Seveso Directive).

HSA advice to Planning Authority unreliable

The HSA did not advise against the granting of planning permission for the incinerator plant. However, when carrying out their risk assessment, they were not in possession of all the facts – this emerged from questioning at the planning Oral Hearing.

In addition, their advice to the Planning Authority was based solely on information from Indaver and their consultants. They did not seek advice from or check the data with any independent experts or any regulatory body or company in any other country with experience of dealing with this type of incinerator.

The Oral Hearing Inspector concluded that there was a significant number of points that were apparently not covered or examined by the HSA in its risk assessment, and that the advice given to the Planning Authority was “based on incomplete and inaccurate information, and incorrect assumption”. He recommended that the HSA’s advice not be relied on in relation to the safety of the proposed development in the event of major accident hazard.

What the HSA did not know!

- ~ A natural gas mains pipeline runs through the site, under the areas where Indaver will be storing highly flammable waste.
- ~ The site is subject to flooding; this is particularly relevant to the possibility of spillage into the harbour waters.
- ~ The coast adjacent to the site is eroding. The danger of locating hazardous plants at seafront locations has been recently documented by a new study on global warming, which mentions Cork harbour as an area needing special attention.
- ~ The wind model to study the movement of pollutants in the harbour was done at Cork airport, over 100 ft. above sea level and more than 8 miles away.

This bears no relationship to what really happens in the harbour when we have long spells in the winter when there is no movement of air and all the pollutants linger in the harbour. They did not know how frequently these conditions occur in the Harbour area.
- ~ They did not know that the slag heaps at Hammond Lane regularly catch fire but and said they would consider it a hazard if so. Hammond Lane is a Foundry/Metal Recovery facility that is surrounded on three sides by the proposed site.
- ~ They did not know if there was an adequate water supply or pressure to fight a fire in the event of an accident nor were they clear about whether there was enough capacity on site to retain contaminated fire water.
- ~ They did not know that there is no major external emergency plan for GSK nearby which there should be under Seveso. When asked who was responsible to ensure this plan existed the HSA Officials said it was the Co. Council’s responsibility.
- ~ They had not taken into consideration the population of Cobh and the fact that there is only one hump-back bridge by which 14,000 people can escape (they considered the town to be too distant - 2km - to be of concern).
- ~ They did not know exactly what Indaver intended to burn when assessing the risks of the incinerator. Nor did they bother to ask!

- ~ They did not know what type of incinerator Indaver intended to use. Had they read the Environmental Impact Statement, as is their duty, they would have been alerted to the type proposed and the operational hazards such a type presented.
- ~ When determining the risk of fire and accident they accepted computer-modelled results from Indaver's consultants assuming they were burning municipal waste only. The incinerator for which planning has been granted is for hazardous and industrial non-hazardous waste, not municipal waste.
- ~ They considered it would be important that the management be competent and familiar with risk assessment in relation to potential accident, but made no check on the competence of the Indaver staff, simply assuming they would be competent.
- ~ They were not aware of the site selection criteria on the siting of hazardous waste incinerators as laid down by WHO, Basel Convention, and EPA Draft Guidelines.

In addition, the HSA did not think it was a problem that the main storage area for the bulk hazardous and flammable waste, awaiting export or burning, is directly opposite the entrance gate to the National Maritime College, effectively blocking off the escape route from the college in the event of an explosion.

Nor did they collect evidence of the risks associated with the operation of the proposed incinerator type (a fluidised-bed incinerator), nor did they seek information from this type of plant in Dundee, which has had a number of fires and has breached emission limits numerous times since it started operation.



Fire at Hazardous Waste Incinerator in Arkansas (2005)

Waste Licence Deficient

In November 2005, the EPA granted a Waste Licence for the incinerator plant at Ringaskiddy. CHASE considers the license to be inadequate, differing from the original planning application, and non-compliant with WHO guidelines and EU legislation.

At the EPA oral hearing, CHASE and others raised the following points:

~ **More hazardous waste means higher risk plant**

Indaver originally submitted incorrect waste categories to the EPA. They then changed the characterization of waste and moved non-hazardous wastes into their proper hazardous category. This should move the facility to a higher risk tier under the Seveso Directive, with a blast zone of typically 1.5km and more stringent conditions. The site should be assessed as such under the planning process.

~ **Increase in waste to be burned**

An Bord Pleanála granted planning permission for a single, 100,000 tonne hazardous waste incinerator. The EPA's licence permits burning of up to 215,260 tonnes, in TWO incinerators. This exceeds by 115,000 tonnes the tonnage specified in the plant's planning permission and licences a second incinerator for which planning permission has not even yet been sought.

~ **EPA mandate unheeded**

The EPA mandate is: "To protect and improve the natural environment for present and future generations, taking into account environmental, social, and economic principals of sustainable development".

Despite evidence of a link between proximity to incinerator and health effects, no assessment of the risk to the 45,000 inhabitants who live within a 5km radius of the site has ever been carried out.

Surely protecting our environment involves the availability of baseline environmental information and monitoring of the health of people living near incinerators. Dr, Kelly, Director of the EPA, has already raised concerns in these areas to the Dept. of Health.

~ **Inadequate EIS**

The Environment Impact Statement (EIS) for the plant is inadequate in relation to geological and groundwater data, traffic data, climatic data, waste inputs data, noise data, flora and fauna data, and assessment of interactions.

The air dispersion model used in the EIS, the purpose of which is to demonstrate potential impact of atmospheric emissions, is not suitable for Cork Harbour and was based on data from Cork Airport where meteorological conditions are quite different.

~ **Toxic residual ash**

Much of the residual ash that will be generated by the plant will be hazardous and must be disposed of to a hazardous waste landfill. There is currently no such landfill in Ireland.

Surely it should be mandatory for the licensee to show clearly that there is a safe disposal mechanism for their ash, which will amount to c. 33% of the volume of the waste burnt.

Judicial Review

The Ringaskiddy and District Residents' Association are now seeking leave for a judicial review of the EPA's decision to grant a licence for the two Ringaskiddy incinerators.

National and International Policy Unheeded

Waste Management Hierarchy

This principle is at the heart of EU, National, and County policy. It sets out a hierarchy of options for dealing with waste, with prevention as the highest priority and disposal (thermal treatment and landfill) as a last resort.

Ireland's national policy advocates the Waste Management Hierarchy and recommends disposal only for "waste which cannot be prevented or recovered".

National Hazardous Waste Management Plan

The "cornerstone" of our National Hazardous Waste Management Plan is WASTE PREVENTION. This is its primary objective. Its secondary objective is to manage any hazardous waste "which cannot be prevented".



It also urges that thermal treatment facilities "must not be allowed to interfere with the potential to prevent or minimize the generation of hazardous waste".

The target in the National Plan is to reduce the quantity of hazardous waste for disposal to 1996 levels (less than ½ that currently generated).

It is clear that our national policies and plans prioritize prevention and minimization and propose a significant reduction in the amount of hazardous waste that ends up incinerated or landfilled.

In the absence of any real progress at the higher levels of the waste hierarchy, and in light of the above targets, the proposed facility:

- ~ Is (at best) premature.
- ~ Would act as a disincentive to achieving the more urgent targets for prevention, minimization, reuse, and recycling.
- ~ Has capacity well in excess of that envisaged in the National Plan (66%-79% overcapacity)

Public consultation and acceptance

International guidelines and EU directives require public consultation and public acceptance in the case of siting incinerator plants.

In relation to Indaver's public consultation process on site selection, the Oral Hearing Inspector concluded that Indaver did not involve the public in any meaningful way whatever.

"The public consultation process, in fact, was a public notification process, and was not designed to, nor apparently intended to, alter the selection of the site."

In addition, there was no public consultation at any stage by the HSA of the vulnerable populations nearby or anywhere else.

There ARE Alternatives

New Zealand, Canberra, Nova Scotia, and some Australian and US States have rejected the incineration option. Instead their governments have made a conscious decision to systematically adopt waste PREVENTION, REDUCTION, REUSE, and RECYCLING, and to take advantage of alternative technologies such as Anaerobic Digestion, Alkaline Hydrolysis, Biodegradation, and

They have discovered that this really does cope with their waste, and that it also:

- ~ Creates jobs and attracts clean industry.
- ~ Creates wealth within local communities.
- ~ Conserves energy and raw materials.
- ~ Creates a clean healthy environment for living in.

Burning waste is a wasted opportunity, according to Dr Paul Connett US, a chemist and scientist with 20 years experience in waste management, who recently appeared on RTE's Primetime. He pointed out that before incineration is even considered, much remains to be done in terms of recovery, recycling, separation of waste streams, product redesign and elimination of organic material to landfill. If all this is managed properly, the need for incineration would be eliminated, as other countries have shown.

Everyone can play a part

GOVERNMENT can take a lead role by making a serious commitment to waste prevention and reduction. They can create the legislative framework within which everyone else can work towards waste minimisation.

We also need the Government to show their commitment to the proper handling of organic waste which, according to the Minister of the Environment, accounts for 75% of what goes to landfill. In a properly structured waste management system, no organic waste would go to landfill. Instead it would be treated biologically and what is left can then be used as a soil improver – this is sustainable waste management.

LOCAL COUNCILS can help make waste reduction and recycling easier, with plenty of well-serviced bring sites, kerbside collections, infrastructure and helplines.

INDUSTRY can consider the disposal of their products from the outset, and design products for easy mending, recycling and minimum waste.

RESEARCHERS can develop and advise on less toxic products, low-waste processes and new uses for waste materials.

PEOPLE can shop for less packaging, start a compost bin, recycle carefully, and refuse to buy products that can't be repaired, re-used, composted or recycled.

What About What Can't Be Recycled?

In other countries, residual waste that can't be reclaimed in any way is biologically treated and landfilled safely. With proper minimisation and separation of waste streams (glass, cardboard, etc.) and with removal of all organic waste, residual waste to landfill can be reduced significantly, with minimum leachate, methane and smells. Quantities to landfill are much smaller and less toxic, which makes far more sense than burying thousands of tonnes of toxic ash from incinerators.

WHO Site Selection Guidelines

Exclusionary factors in site selection for hazardous waste management facilities

- ~ Unstable or weak soils, such as organic soil, soft clay or clay-sand mixtures, clays that lose strength with compaction, clays with a shrink-swell character, sands subject to subsidence and hydraulic influence, and soils that lose strength with wetting or shock.
- ~ Subsidence owing to solution-prone subsurfaces, subsurface mines (for coal, salt and sulphur) and water, oil or gas withdrawal.
- ~ Saturated soils, as found in coastal or riverine wetlands.
- ~ Groundwater recharge, as in areas with outcrops of aquifers of significant or potential use, considering water availability and regional geology (where an impermeable or retarding layer shields the aquifer from the land surface, a specific site analysis should be conducted).
- ~ Flooding, as in flood plains or hydraulic encroachment, coastal or riverine areas with a history of flooding every 100 years or less, and areas susceptible to stream-channel or storm encroachment (even if not historically subject to flooding).
- ~ Surface water, which precludes sites above an existing reservoir or a location designated as a future reservoir, or above an intake for water used for human or animal consumption or agriculture and within a distance that does not permit response to a spill based on high-flow (most rapid) time of travel.
- ~ Atmospheric conditions, such as inversions or other conditions that would prevent the safe dispersal of an accidental release.
- ~ Major natural hazards, such as volcanic action, seismic disturbance (of at least VII on the modified Mercalli scale) and landslides.
- ~ Natural resources, such as the habitats of endangered species, existing or designated parks, forests and natural or wilderness areas.
- ~ Agricultural or forest land of economic or cultural importance.
- ~ Historic locations or structures, locations of archaeological significance and locations or land revered in various traditions.
- ~ Sensitive installations, such as those storing flammable or explosive materials, and airports.
- ~ Stationary populations, such as those of hospitals and correctional institutions.
- ~ Inequity resulting from an imbalance of unwanted facilities of un-related function or from damage to a distinctive and irreplaceable culture or to people's unique ties to a place.

The Ringaskiddy incinerator fails on 13 of the 14 above exclusionary criteria.

BSEM Report on 'Health Effects of Incinerators'

Conclusions of report by British Society for Ecological Medicine

1. Large epidemiological studies have shown higher rates of adult and childhood *cancers* and of *birth defects* around incinerators. Smaller studies and a large body of related research support these findings, point to a causal relationship, and suggest that a much wider range of illnesses may be involved.
2. Recent research has confirmed that particulate pollution, especially the *fine particulate* (PM_{2.5}) pollution which is typical of incinerator emissions, is an important contributor to *heart disease, lung cancer*, and an assortment of other diseases, and causes a *linear increase in mortality*. Incinerators are in reality particulate generators, and their use cannot be justified now that it is clear how toxic and carcinogenic fine particulates are.
3. Other pollutants emitted by incinerators include heavy metals and a large variety of organic chemicals. These substances include known carcinogens, endocrine disruptors, and substances that can attach to genes, alter behaviour, damage the immune system and decrease intelligence. The dangers of these are self-evident.

Some of these compounds have been detected hundreds to thousands of miles away from their source.

4. Additional dangers arise from radioactive particulates emitted from incinerators licensed to deal with hazardous waste.
5. Incineration only reduces the volume of waste by 30-50%. Modern incinerators produce far more toxic fly ash (air pollution control residues) than older incinerators; these pose important long term health risks. No adequate methods exist for the disposal of this ash.
6. The greatest concern is the *long-term* effects of incinerator emissions on the developing embryo and infant, and the real possibility that genetic changes will occur and be passed on to succeeding generations. Far greater vulnerability to toxins is documented for the very young, particularly foetuses, causing cancer, spontaneous abortion, birth defects or permanent cognitive damage. A worryingly high body burden of pollutants has recently been reported in two studies of cord blood from new-born babies.
7. Waste incineration is prohibitively *expensive* when health costs are taken into consideration. The EC Commission figures indicate that a single incinerator could cost the tax payer up to £50 million a year. Recent American data showed that strict air pollution control has saved tens of billions of dollars a year in health costs.
8. Waste incineration is unjust because its maximum toxic impact is on the most vulnerable members of our society, the unborn child, children, the poor and the chemically sensitive. It contravenes the United Nations Commission on Human Rights, the European Human Rights Convention (the Right to Life), and the Stockholm Convention, and violates the Environmental Protection Act of 1990 which states that the UK must prevent emissions from harming human health.

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