

**Oral Hearing of Objections Against the Proposed Decision by the Environmental Protection Agency to Grant a Waste Licence to Indaver Ireland for a Waste Management Facility, including a Non-Hazardous Waste Incinerator at Carranstown, Duleek, County Meath**

*Waste Licence Application Register Number 167-1*

**Oral Hearing, Drogheda, 11 March 2005**

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**SUMMING UP**

**by Mr. Jack O'Sullivan, B.Sc., M.I.Biol.**

**on behalf of the Mayor and Elected Members of Drogheda Borough Council and Dundalk Town Council, and on behalf of An Taisce, the National Trust for Ireland**

**1. Introduction**

To begin my closing statement on behalf of the above clients for this oral hearing, I can do no better than to repeat what Joe Noonan said on behalf of the Cork Harbour for a Safe Environment (CHASE) group at the beginning of his closing submission in Cork approximately two weeks ago: "This has been an extraordinary hearing".

**2. The Applicant**

Joe Noonan pointed out that no person from the Belgian parent company, Indaver NV, neither director nor employee, attended or gave evidence at the oral hearing held by the EPA in Cork; and the same may be said about this hearing. We have heard evidence from John Ahern, Jackie Keaney and Conor Jones; all of whom hold various positions with Indaver Ireland, but it appears that none of these will be responsible for operating the proposed incinerator. All other evidence presented on behalf of the applicant was given by consultants, who had varying degrees of familiarity with the process and the proposed site.

The applicant's response to many questions about the projected environmental performance of the proposed incinerator, about its operating parameters, or how effective it might be in meeting emission standards, was to say that the parent company has been operating similar plants in Belgium, and these incineration plants were meeting the required emission standards. We know

that some of them did not meet emission standards all of the time, and that unexpected incidents occurred.

The oral hearing was informed that Indaver NV has wide experience of waste handling, treatment, sorting, recycling, recovery and incineration in Belgium; and there is no reason to doubt this information. Yet no person from Indaver NV was brought to this oral hearing by the Applicant in order to describe the detailed operation of the company's incineration plants in that country, and to be questioned about mishaps, shut-downs and other incidents which would give rise to concern if the proposed plant at Carranstown were to be permitted. It may be wrong to draw the conclusion that the parent company has adopted a "stand back" or "hands off" approach, waiting to see how its Irish subsidiary performs. On the other hand, such an inference might be correct.

Because no representative of the parent company came to give evidence, we also do not know on whose initiative this waste licence application was made (see attachment B1.1 of the licence application). Is it being strongly promoted by Indaver NV, with the Irish subsidiary following instructions; or is Indaver Ireland the active promoter, with the Belgian parent company going along with the idea, either willingly or unwillingly. These are important issues, as it seems that the expertise to construct and operate the proposed incinerator must come from Belgium.

The EPA should not be satisfied with the answers given by the Applicant, or with the lack of information about these issues; it is the duty of the Agency, as a technically qualified organisation in a quasi-judicial role, to ask detailed questions and to obtain more satisfactory and detailed answers than we have heard so far.

### **3. The Project**

Significant details of the proposed incinerator have not been provided by the applicant.

Mr Conor Jones, on behalf of Indaver, could not provide information on monitoring equipment, its calibration, whether or not it would be affected by vibration from blasting in the nearby quarry, or on how unacceptable wastes (e.g., those containing chlorine) could be excluded from the incineration process. It appears that vitally important parameters of the process, which would have significant effects on the environmental performance of the proposed incinerator, have not yet been determined by the applicant. For example, the fabric mesh size of the baghouse filters, the pressure drop across the filter fabric, and thus the power of the fans required, have not yet been decided. These details will have a significant influence on the effectiveness of the filtration system and on the noise generated. In response to questions, Conor Jones admitted that he had no experience of operating an incinerator, and he had no knowledge of the process of dioxin formation during combustion.

In response to questions about monitoring of emissions in the plant, Conor Jones had no knowledge of the relevant CEN standards, or of the number of

probes required to obtain accurate data on components of gases within the stack. The response of the applicant to nearly all questions about the plant was that it would be "a turnkey contract", by which all these issues will be resolved at the detailed design stage by the contractor appointed. This appeared to leave the contractor in control of specifying the monitoring equipment, with the applicant totally dependant on information provided by equipment suppliers.

When questioned on this issue, Conor Jones responded that Indaver might specify some requirements, for example, a particular type of software for the plant's control system. It became clear, as his response to questions by Messrs Joe McCarthy, Pat O'Brien, Tom Burke and others continued, that the waste licence applicant has not engaged fully with the detailed planning for the project, but that what we have been shown is merely an outline of the process, with many key features yet to be determined or decided. Even if such details are to be given to the Agency at a much later stage, i.e., if and after a waste licence may be granted, the public is excluded from effective participation in the decision making process, and this is contrary to the EU legislation and to the Aarhus Convention.

The absence of so much significant information about the operation, safety features, control systems and environmental monitoring systems of the proposed incinerator is a compelling reason for the Agency to refuse a waste licence on the grounds of inadequate information.

The projected emission data and the assurances that the plant would operate within the proposed licence conditions appear to depend on the incinerator operating at full efficiency, and accident free, at all times. We know that industrial accidents happen at incineration plants, examples were given at this oral hearing, but the applicant provided no statistical data about the frequency and severity of these accidents. We were told that there are many incineration plants in EU member states and other European countries, and therefore it must be possible to generate such statistics for accidents and malfunctions. Because the applicant has not provided this data, it should be obtained *independently* by the Agency as a standard procedure, in order to make some attempt at quantifying the risk to human health, agriculture and the environment.

#### **4. The Need for an Incinerator and the Question of Sustainability**

There was agreement between the parties at the oral hearing that "prevention of waste is the cornerstone of all waste policies" (as stated by the Applicant), and that "if waste cannot be prevented we should try to minimise its production". The applicant further stated that if waste was produced, "we should reuse it, recycle it, recover energy from it and only as a last resort should we dispose of it". We know that recyclable types of waste "such as paper, glass, wood and metal are easily dealt with"; and organic waste can be composted, recovering some of the contained energy as methane which can be used as a fuel.

So why built an expensive incinerator ? It appears the only reason is because the facility will more than repay its capital and operating costs, especially given that any damage caused by pollution or contamination of air, water, soil or food

will be an "externality" as far as the operator is concerned, and will not reduce the incinerator's earnings.

If an incinerator is not needed to serve a public or national need, or for the common good, and the country can do without this particular facility, why allow it? Independent proof of its necessity should be required before the EPA can evaluate whether or not the risk of constructing it is acceptable. This hearing has not been provided with such proof, and its omission is a key factor which should be considered by the Agency.

Some 20 years ago, we were told that a toxic waste incinerator was a vital necessity if Ireland's industrial growth and development were to continue. No industrial toxic waste incinerator was ever built, yet Ireland's chemical and pharmaceutical industries did not stagnate, but continued to expand, along with many other new industries. The need did not exist, the State agencies at the time were wrongly advised, or were persuaded by industrial interests, against the interests of the inhabitants of this country, who did not want an incinerator. So why should we take on trust again that an incinerator is necessary? Will the earlier scenario be repeated, i.e., will no incinerator be built; or will the present day stronger industrial interests prevail over a weaker perception by the State of its obligation to protect the Irish public? Perhaps only the EPA can decide.

This country, and its Government, are under an obligation to reduce waste output, to eliminate the production of non-recyclable wastes, to promote re-use, repair, recycling, composting and other more economically desirable and environmentally better ways of dealing with waste, to save resources and to use natural resources more efficiently, in order to comply with EU legislation. The EU Environment Commissioner has stated that "*incinerators are not the answer to waste management ... [and] ... the environmental impact of incineration is significant.*" The Head of EU Waste Management has pointed out that "*The Commission does not support incineration*", and that in many countries incinerators are now considered similar to nuclear power stations and should be avoided.

If the EPA grants a waste licence for the proposed incinerator at Carranstown, it is going against EU policy and against its own mission statement which states that the purpose of its existence as an agency of the State is "To protect and improve the natural environment for present and future generations, taking into account the environmental, social and economic *principles of sustainable development*" [our italics, for emphasis].

## **5. The Proposed Location**

We have heard evidence that the regionally important aquifer, rated by the GSI as extremely vulnerable close to the proposed site, and moderate vulnerable beneath the site, is unique in Leinster. The vulnerability of this aquifer and its importance for future water supply for the town of Drogheda have not been fully accepted by applicant, and we now know that any contamination of the aquifer by dioxins or other persistent organic pollutants could make the water unusable for decades.

In her evidence to the oral hearing on behalf of the applicant, Ms Teri Hayes attempted to show that the vulnerability rating of the aquifer underlying the proposed site should be changed from extreme or high to moderate, based on soil thickness and type, from data obtained by a small number of boreholes. But her evidence did not appear to take into account removal of some overburden and pile driving during construction, or the effects of vibration from blasting in the adjacent quarry.

We have heard that Irish Cement Limited operates a quarry, where rock is extracted by blasting, adjacent to the proposed site, and that vibration from blasting increases the risk of damage to any underground structures and may also damage sensitive monitoring instruments. Yet the applicant has carried out no risk assessment of the possibility of damage to the proposed incinerator structure, foundations, or instrumentation.

The difficulty of identifying a source of atmospheric contamination in an area where other industries (e.g., Irish Cement Ltd) are discharging similar substances to the atmosphere has also been pointed out, with the added problem of establishing responsibility if background levels should rise locally.

The town of Drogheda is approximately 6.0 km (3.75 miles) north-eastwards of the site of the proposed incinerator, and some residential suburbs are nearer the proposed location, being no more than 4.0 km (2.5 miles) distant. The town is located in an east-west valley prone to atmospheric inversions which result in a risk of elevated levels of atmospheric contaminants during certain weather conditions. A major population area would therefore be directly downwind according to the direction of the prevailing winds.

The Cooley Peninsula and the Mourne Mountains (in the District of Newry and Mourne) are also located downwind from the proposed site, and there are lower hills directly north of the site. The risk of particulate deposition on these elevated areas has not been fully assessed.

The totality of the proposed site's characteristics lead us to conclude that, from an environmental perspective, it would be difficult to select a more unsuitable location for the proposed incinerator.

## **6. The Wastes to be Burned**

An incinerator requires a continuing supply of combustible waste (which must have a high energy content) throughout its life cycle. In his proof of evidence, John Ahern stated that the residual waste stream is "high in energy content" and suitable for incineration. No details have been given as to how the wastes to be accepted would be made truly residual, i.e., free of all materials suitable for recycling or composting, as required by the EU directives on waste. Thus, paper, plastic, wood, glass and metals, which are easily recyclable, must be excluded. Truly residual waste therefore cannot be high in energy content because those materials with the high calorific value (primarily plastic and paper) have been diverted for recycling; and additional energy will be required

in order to bring the combustion temperature to the necessary standard. It is well known that wet residual waste needs an auxiliary fuel such as oil or gas, for effective combustion.

The requirements for the incinerator operator are therefore in direct conflict with EU policy and the Government's stated aim of increasing the proportion of waste being recycled. This problem and inherent conflict creates a significant risk that the operator will find reasons for burning significant amounts of plastic and paper which could otherwise be recycled.

Councillor Dominic Hannigan pointed out that, by the applicant's admission in December 2000, the waste to be burned cannot be checked with absolute certainty for its possible content of hazardous material, and the procedure for controlling and validating the origin of the waste being burned had not been described. It appears that nothing has been learned during the last four years, since Conor Jones was equally unable to give an assurance (when questioned by Joe McCarthy) that all hazardous waste would be excluded and not accepted. It would appear, from the response by Conor Jones, that the applicant would rely almost exclusively on its customers, i.e., companies which collect waste, to ensure that only non-hazardous waste would be delivered. If the experience of Wicklow County Council is to be taken to consideration by the Agency, a significant number of these waste collection companies cannot be relied on. It is public information that some seven companies, operating mainly in the Dublin Region, are being taken to Court by Wicklow County Council for illegal dumping.

## **7. Disposal of Ash**

The proposed incinerator is an "end-of-pipe" approach to the waste problem, this type of solution is rarely complete, and the proposed incinerator is no exception. The ash produced will have to be landfilled, metals and non-biodegradable organic substances in the ash will appear in leachate from the landfill, the leachate will have to be treated, sludge from the treatment plant will either be incinerated or will be deposited on the landfill, and the treated effluent will be discharged to a nearby river.

We heard arguments about the disposal or use of the ash, with bottom ash, boiler ash and fly ash being hazardous to varying extents. Fly ash and boiler ash will have to be exported to a hazardous waste landfill in some unspecified location; while the applicant intends that bottom ash (clinker) would be tested for its suitability as a road-building material. Whatever about its suitability, which is seriously in doubt because of its high leachable metal content, bottom ash may be commercially unacceptable or simply unwanted because of Government policy to reuse or recycle as much as possible of Ireland's huge quantities of construction and demolition waste. The Agency will be well aware of the current programme and efforts being made (in which it is participating) to ensure that C&D waste is not simply landfilled, but is recycled to the maximum extent.

## **8. Dioxins and Other Emissions to the Atmosphere**

Evidence given by Dr Fergal Callaghan (which subsequently had to be amended) suggested that the predicted ground level concentration of PCDD/F from the proposed incinerator would be  $1 \text{ fg/m}^3$ , and the additional PCDD/F from inhalation would be  $0.00025 \text{ pg}$  expressed as TEQ  $\text{pg/kg bw/d}$  (toxic equivalent measured as picograms per kilogram of a person's body weight per day). He also predicted that the dose of PCDD/F obtained by ingestion of meat and milk would be  $0.337 \text{ pg/kg bw/d}$ .

Dr Paul Connett, an internationally renowned expert on dioxins, furans and other persistent organic pollutants, pointed out that considerable experience obtained by the United States EPA over many years and in many incinerator locations, showed a consistent relationship between the dose via inhalation and the dose via food, with the latter being 1,000 to 3,000 times higher. Thus the dose of PCDD/F which an individual at maximum risk would receive would be  $0.25 - 0.75 \text{ pg/kg/day}$ . If this dose range is added to the baseline intake (from the current background exposure levels) of  $0.575 \text{ pg/kg/day}$  (given on page 7 of Dr Callaghan's written evidence), the total dose of baseline plus increment from the proposed incinerator would come to  $0.825 - 1.325 \text{ pg/kg/day}$ . This dose has a high risk of exceeding the lower end of the WHO allowable daily intake range of  $1-4 \text{ pg/kg/day}$ . This risk would not be permitted in the United States as it translates to an incremental cancer risk of 825 to 1325 per million of population, or approximately 1 in 1,000.

This degree of risk should also be unacceptable in Ireland, unless of course our EPA places a lesser value on human health and lives than does the US EPA.

## **9. Adverse Public Health Effects of the Proposal**

Dr Liz Cullen described the adverse effects of dioxins and furans, and her expert evidence was corroborated by Dr Paul Connett who described in detail the biological impact of dioxins even at extremely low levels where their effects have been observed but not fully understood. There is no evidence of a dioxin-cancer threshold, according to a recent research paper presented by Dr Liz Cullen. In other words, there is no lower limit of exposure below which cancers will not be caused in a human population.

As stated by Dr Anthony Staines, the applicant's EIS and "Response to Third-Party Appeals" predict no potential impacts on the health of local residents from any of the substances emitted by the proposed incinerator. Dr Staines pointed out that there is no indication in the procedures used by the applicant to arrive at these conclusions, and he said that no evidence is given to support the claim by the applicant that the public concerns raised by objectors "are the result of misinformation and untruths circulated in the public domain regarding incineration". On the contrary, he finds that the applicant's discussion of the health effects of dioxins is below his expectation of a discussion of this important issue. When questioned, he also stated that he believed the applicant's EIS was inadequate as it contained no human health impact assessment, and therefore the EPA should not base its decision upon it.

The evidence of both of these medical experts clearly indicates that there is a significant health risk attached to the proposed incinerator, arising from dioxins, furans, other organics, and particulate matter such as those described and measured as PM<sub>10</sub> and PM<sub>2.5</sub>; and that the Precautionary Principle should be applied, and the waste licence application should be refused.

The Agency should also take into account that an assessment of the direct and indirect effects of a project on human beings, is required by Article 3 of Directive 85/337/EEC as amended; and this assessment has not been undertaken.

#### **10. Greenhouse Gas Emissions, the Kyoto Agreement, and Emissions of Sulphur Dioxide and Nitrogen Oxides**

Waste cannot be regarded as a source of renewable energy, as Indaver claim; it is the result of exploiting natural resources which may not be sustainable or renewable (e.g., plastics from exhaustible reserves of hydrocarbons, paper and cardboard from diminishing virgin forests, and metals which require very large amounts of energy to extract and process). Wastes are therefore man-made reservoirs of recoverable materials which must be recycled in order to prevent further unsustainable extraction of resources, exploitation of raw materials and intensive use of energy.

The burning of wastes therefore cannot be considered as "carbon neutral", and the proposed incinerator would be, if permitted, a contributor to Ireland's greenhouse gas emissions.

Indaver claim that 75 per cent of the energy produced by the combustion of waste will be recovered as steam in the boilers (section 2.4.3, on page 29, of the EIS). The Agency should ask Indaver what percentage of the calorific value of the waste will actually be available for electricity generation for export to the national grid, i.e., the net energy production. It is only this energy, and no other, which can be considered as replacing the energy from other fuels used elsewhere to generate electricity.

Sulphur dioxide and nitrogen oxides will also be generated by the proposed incinerator, adding to Ireland's emissions of these gases. This is in conflict with our commitments under the Gothenburg Protocol and EU Directive on national emission ceiling levels (Applicant's EIS, section 10, pages 129 *et seq*), which will require this country to make very substantial reductions in emissions of SO<sub>2</sub> and NO<sub>x</sub>. While Indaver state that their emissions of SO<sub>2</sub> and NO<sub>x</sub> will be less than the amounts emitted by conventional power plants per unit of electricity generated, this comparison appears to be based on traditional electricity generating plants, and not on what is currently required under the EU Directive. For example, the plant at Moneypoint is currently installing flue gas desulphurisation equipment which will significantly SO<sub>2</sub> emissions per unit of electricity generated.



## **11. Persistent Organic Pollutants and the Stockholm Convention**

As Mr Fergal Duff pointed out, the principles and objectives of the Stockholm Convention now apply to all EU Member States and to State agencies, and the EPA is no exception. That Convention, which is a legally binding agreement, requires Ireland to reduce and eliminate certain priority Persistent Organic Pollutants (POPs), especially dioxins and furans, the most significant amounts of which are produced as by-products of incineration.

If the EPA decides to grant a waste licence for the proposed incinerator, such a decision would be in clear breach of this State's international obligations under the Stockholm Convention; and Ireland could be exposed to very embarrassing penalties.

## **12. The Environmental Impact Assessment Process**

An Taisce and other environmental organisations are particularly concerned about the inadequate procedure by which this applicant's Environmental Impact Statement and other EISs (for projects which require an EPA licence) are assessed in Ireland, i.e., some of the issues are assessed by planning authorities, and other issues by the EPA, while some important issues are omitted entirely from consideration. This issue of split jurisdiction is the basis of legal proceedings being taken by the European Commission against the Government of Ireland for breaching EIA Directive 85/337/EEC as amended by Council Directive 97/11/EC; and the Commission has issued a Reasoned Opinion on 25 July 2001 confirming that Ireland is in breach of the Directive.

Article 7 of Council Directive 96/61/EC requires Member States to ensure that procedures *"are fully co-ordinated where more than one competent authority is involved, in order to guarantee an effective integrated approach by all authorities competent for this procedure"*. It is clear from the evidence given at this oral hearing that this Articles has not been complied with.

Furthermore, a recent judgement of the High Court places an obligation on the EPA to carry out a full Environmental Impact Assessment process in accordance with the EIA Directives of the EU on all of those matters which have not formed part of the remit of the Planning Authority. One of the most important issues not within the remit of An Bord Pleanála, and which the EPA must therefore address fully, is the direct and indirect effects of this project on human beings, as required by Article 3 of Directive 85/337/EEC as amended. It is not adequate for the Agency to state merely that emissions from a proposed project must keep below certain emission limit values, while failing to consider other effects on local populations.

Dr Anthony Staines gave very compelling and expert evidence that the EIS and the Environmental Impact Assessment process were flawed because of the absence of any form of health impact assessment to determine or assess the impacts of the proposed incinerator on human health.

### **13. Failure to Address Transboundary Impacts**

Provision should have been made for the assessment of transboundary impacts, as required under the EIA Directives. As we were informed in evidence given at this hearing by representatives of Newry and Mourne District Council, no consultations have been undertaken with either the competent authorities or members of the public in Northern Ireland.

Failure to address Transboundary Impacts is not a minor issue for the EPA, as the EIA Directive is very clear about this responsibility, as stated in Article 7 of EIA Directive 85/337/EEC, amended by Council Directive 97/11/EC. The failure to address transboundary impacts is sufficiently serious to invalidate the decision-making process; and it is not sufficient to state that there will be no such impacts, especially when representatives from a local authority in another Member State have attended and given evidence at this hearing, expressing concern about the impact of the proposed incinerator in the area under their jurisdiction.

### **14. The Practical Approach and Solution of Zero Waste**

John Ahern in his written and spoken evidence said that Zero Waste is a noble concept, and it holds the highest position in the waste hierarchy, as the elimination of waste is the ultimate target. Unfortunately, he was incorrect in stating that the concept of Zero Waste was founded in Canberra, Australia; and that the full description of the concept was "Zero Waste to Landfill", shortened by opponents to his project as "Zero Waste". As Dr Paul Connett pointed out in his evidence, if the Zero Waste movement is described as a "Zero Waste to Landfill" movement, it would completely subvert the philosophy of this world-wide effort.

The term Zero Waste has its origins in the highly successful Japanese industrial concept of total quality management (TQM). It is influenced by practices such as "zero defects", the extremely successful approach based on incremental targets directed at the pursuit of optima rather than restricting progress to choices between alternative known solutions. "Zero defects" has been extraordinarily successful with producers such as Toshiba achieving results as low as one defect per million. The concept is also close to that of "zero discharge", adopted (without the use of the term) by the Oslo and Paris Commission on the Northeast Atlantic in 1992 and by the Barcelona Convention in Mediterranean in 1993. The Zero Waste approach has inspired national movements and policy directions in New Zealand, Canberra, and in other locations in Australia, Canada, United States and Europe. Zero Waste is not just "zero waste to landfill" but approaches the issue of waste with a re-defined role and a starting point which includes our entire systems of production and consumption.

Mr Ollan Herr provided detailed evidence of the financial savings achieved by implementing the Zero Waste strategy in Nova Scotia, and suggested that 6,000 to 7,000 jobs could be created by implementing Zero Waste in Ireland. The report he presented contains a comprehensive full cost-benefit analysis of

Nova Scotia's waste-resource management system, taking into account benefits such as avoided greenhouse gas emissions and liability costs and the more efficient use of landfills, and noting additional benefits such as increased employment. Nova Scotia's strategy has created more than 1,000 new jobs, exceeding its target of 600 jobs by almost 70 %. New enterprises developed under Nova Scotia's waste-resource management strategy include used tyre recycling, plastics processing, and the manufacture of liner board, paper products and cellulose, based on the processing of recyclables.

The economic and employment benefits of Nova Scotia's strategy must be contrasted with our failure in Ireland to produce any comprehensive full cost-benefit analysis of waste-resource management options. Instead, we are promoting and adopting the least desirable methods of dealing with our discarded materials, viz., landfilling and incineration. It is instructive to note that, perhaps because of these short-sighted policies, we have lost at least two firms manufacturing useful products from recyclables (Irish Glass Bottle, and Smurfit Paper Mills), while most of our recyclable materials end-up in landfills (legal and illegal) or are exported for processing elsewhere.

Ollan Herr's evidence is important because it is based on an actual situation in a country similar to Ireland, supported by detailed economic arguments to show how successful the adoption of Zero Waste has been. His evidence also shows that Zero Waste excludes incineration of waste, as incineration is fundamentally in conflict with the Zero Waste approach that the materials we discard, and which we might call waste, are essentially useful resources to be deployed for social and economic purposes.

## **15. Conclusion**

The proposed incinerator is contrary to national and EU policy, the proposed location is very inappropriate and inherently unsuitable, the incinerator would create statistically significant adverse impacts on human health, would damage recycling initiatives and existing local economic resources such as agriculture, and should not be licensed.

Jack O'Sullivan

**Environmental Management Services**

**On behalf of the Mayor and Elected Members of Drogheda Borough Council and Dundalk Town Council, and An Taisce**

15 March 2005