

C.H.E.P.A.
(CORK HARBOUR ENVIRONMENTAL PROTECTION ASSOCIATION)

WITNESS STATEMENT – HAZARDOUS WASTE

11TH MAY, 2009

AN BORD PLEANÁLA
STRATEGIC INFRASTRUCTURE APPLICATION PL04.PA0010

WASTE-TO-ENERGY FACILITY AND TRANSFER STATION AT
RINGASKIDDY, CO. CORK

APPLICANT: INDAVER (IRELAND)

My name is Marcia D'Alton. I am a member of CHEPA, the Cork Harbour Environmental Protection Association. CHEPA is an organisation which brings residents of all sides of Cork Harbour together with the common aim of protecting and improving the living and recreational environment of Cork Harbour.

I am Deputy Mayor of Passage West Town Council. The jurisdiction of Passage West Town Council encompasses the three harbourside towns of Passage West, Glenbrook and Monkstown. During my term as elected member, I drafted the *Architectural Design Guidelines for Passage West and Monkstown* in consultation with and on behalf of Passage West Town Council. These have since been acknowledged in the current *Carrigaline Electoral Area Local Area Plan* and will be incorporated into the redrafting of the *Local Area Plan* in 2012. I have delivered presentations on the architectural heritage of Passage West and Monkstown on behalf of Passage West Town Council to several departments within Cork County Council, to larger developers with an interest in the towns and to community groups. The aim of these initiatives was to achieve a common goal for new development to complement and enhance the valuable architectural heritage of Passage West and Monkstown. I have researched, designed and produced the Passage West and Monkstown Railway Heritage Trail which celebrates items of railway infrastructure along the route of the old Cork, Blackrock and Passage Railway. I am a member of the Advisory Group of the Cork Harbour Forum and Chairperson of the Working Group on Heritage in Cork Harbour.

I qualified as a civil engineer from University College Cork in 1994 and obtained a Masters of Engineering Science in 1995. I worked as an environmental consultant until 2003, both for one of Ireland's then lead consultancies and running my own consultancy. My fields of specialisation are treatment and management of non-hazardous, agricultural and sludge wastes, nutrient management, renewable energy development, catchment water quality management, waste water treatment, the licensing and permitting of waste handling facilities and Integrated Pollution Control licensing. I have completed projects in these areas for a range of clients, including local authorities, the Department of the Environment, Heritage and Local Government, the UK Department of the Environment and Rural Development, the North/South Ministerial Council, the European Commission, private industry and community groups.

I have been sailing in Cork Harbour for most of my life and am a member of Monkstown Bay Sailing Club.

I am a mother of four young children, all of whom attend school in Scoil Barra Naofa, Monkstown.

My family and I lived in Monkstown until three years ago. We now live in Passage West.

Most Irish legislation impacting on waste management is now implemented as a result of European Directives. The European Union's waste legislation comprises three main elements:

- horizontal legislation, establishing the overall framework and guiding principles for waste management
- legislation setting technical standards for the operation of waste facilities, such as incinerators
- legislation on specific waste streams, generally to reduce their hazardousness or to guide the method by which they are managed.

Directive 75/442/EEC on waste²⁴ was the first key piece of horizontal legislation governing the management of waste across Europe. Revised and updated in 2008²⁵, it introduces four basic principles to be observed in waste management planning, waste collection, waste holding, waste treatment and final disposal.

- The Waste Hierarchy is set out in Article 4 of the Directive. The Principle of Prevention is that all waste is dealt with as high up the Waste Hierarchy as possible. Since all waste treatment or disposal options have some impact on the environment, the only way to avoid impact is not to create waste in the first place. If we can reduce its hazardousness, then it is not so difficult to manage. So waste prevention is at the top of the waste hierarchy, followed by reuse, followed by recycling, then by other recovery including energy recovery and the least favoured option for waste management is disposal.
- Article 14 clearly defines the Polluter Pays Principle, which is that the costs of waste management should be borne either by the waste producer or the waste holder.
- The Principles of Self-Sufficiency and Proximity are set out in Article 16. They describe how each Member State should either ensure they have adequate facilities for waste recycling, treatment and disposal or that they should liaise with other Member States such that the whole European Union becomes self-sufficient in waste disposal.
- Also enshrined in the Treaty on the European Union, Article 13 reminds that the Precautionary Principle should apply to all aspects of waste management, particularly with regard to ensuring that such waste management is carried out without endangering human health or the environment.

Section 26 of the Waste Management Act 1996²⁷ enacting Directive 75/442/EEC²⁴ requires the Environmental Protection Agency (EPA) to prepare a National Hazardous Waste Management Plan. The first such Plan was published in 2001⁵, while the next was published in 2008 and relates to the period 2008 – 2012²⁰. The National Hazardous Waste Management Plan is a statutory document prepared in the context of the four guiding principles outlined in the Framework Directive.

The *National Hazardous Waste Management Plan 2001*⁵ recommended that a “*thermal treatment disposal facility for the management of hazardous waste currently exported for disposal is required if Ireland is to become self sufficient in hazardous waste management*”. In 2004, Indaver Ireland was granted planning permission for an incinerator to co-treat hazardous and non-hazardous industrial waste. The *National Hazardous Waste Management*

*Plan 2008 – 2012*²⁰ recognises this and reiterates that “*incineration will be needed in order for Ireland to move towards self-sufficiency in the treatment of hazardous waste*”.

But how are the aims of the Principle of Prevention helped by the proposed waste-to-energy facility? Is this the right time for the establishment of such a facility in Ireland? And if the development proposed is the right technology at the right time, is this chosen location at the end of the Ringaskiddy peninsula responding to the principles on which the Framework Directive is based?

How does the proposed development contribute to the Principle of Prevention?

The *National Hazardous Waste Management Plan 2008 – 2012*⁵ estimates Ireland’s hazardous waste production in 2006 to be about 284,000 t. This comprises a range of materials, some solid, some liquid and some in between. But the vast bulk of hazardous waste – over 40% - generated in Ireland is solvent. Solvents are widely used to remove paint, oil, grease and dirt. Normally they are used only once and then require disposal. While a certain percentage of solvent waste arising in Ireland is generated this way, most of it comes from the pharmachem sector in which it is used for both manufacturing and cleaning.

Ireland has been very successful in attracting large and multinational pharmaceutical companies. Some 16 of the top 20 pharmaceutical companies operate in Ireland with most of the plants seen as benchmarks for the rest of the world. The pharmachem industry here is dominated by a large cluster of multinational pharmaceutical manufacturers that are mostly located in the Cork and Dublin regions.

But while Ireland has attracted a dynamic and relatively stable pharmachem sector, it has not complemented the industry with the range of waste facilities needed to serve the manufacturing process. Hazardous waste production in 1996 was estimated by the EPA to be over 229,000 t. Of this, 23% was exported abroad for treatment or disposal⁵. As Irish GDP rose in the late 1990s and early 2000s, waste production increased too. By 2004, hazardous waste production had risen to nearly 308,000. Due to the continuing lack of treatment and disposal facilities, 54% of this was exported¹⁹ (Figure 1).

In accordance with the Principles of Self-Sufficiency and Proximity, Ireland is advised to move towards the aim of self-sufficiency in waste management. However, it is permitted to work towards treating waste in the nearest most suitable installation in co-operation with other European Member States. The ultimate aim, described in Article 16(2) of the revised Waste Framework Directive²⁵, is for “*the Community as a whole to become self-sufficient in waste disposal as well as in the recovery of waste ...*”.

Although exports of hazardous waste from Ireland in 2006 decreased by 18% over exports in 2004²⁰, 48% of hazardous waste produced in Ireland in 2007 left Ireland²³ (Figure 2). These are the most recent statistics publicly available and are provided by the Environmental Protection Agency. So while all of the waste leaving Ireland was either treated or disposed of within the Member States, and is therefore within the spirit of Article 16(2) of the revised Waste Framework Directive, Ireland is quite clearly not self-sufficient in hazardous waste management.

Working through the Irish planning system can be slow. Sometimes this slow speed is the choice of the developer who may stall plant development for economic reasons; in other cases it is a function of the process. Various facilities for hazardous waste management, including that previously proposed by Indaver for Ringaskiddy, have been proposed over the last eight or ten years. Few have seen construction through to operation. But trends during that time in the EPA's hazardous waste statistics could be telling an interesting story.

On the face of it, between 1996 and 2006, hazardous waste generation increased by 24%. Exports of hazardous waste nearly doubled during that same period. They reached a high in 2004, when 54% of all hazardous waste produced in Ireland left the country for treatment and/or disposal. In 1996, indigenous solvent recycling was clearly a dominant form of waste treatment (Figure 3). Some 20% of hazardous waste arising was incinerated, while 8% of waste arising was sent abroad for incineration, 12% was incinerated on site in Ireland. The other clearly dominant form of waste treatment was organic substance recovery^{3, 5, 19, 20, 23}.

By 2004, much had changed (Figure 4). Export played a far more significant role in the total waste management picture. The percentage of waste for incineration had risen to 30% of all waste arising. More was incinerated abroad than at home. High-solvent waste as a fuel source had become a dominant form of treatment, again, mostly abroad. Of all hazardous waste arising, 15% was subject to solvent recycling. For the first time, physico-chemical treatment of waste became statistically significant, with 9% of all waste being treated, not abroad, but in Ireland. This was the year when hazardous waste production and export hit an all-time high^{3, 5, 19, 20, 23}.

But the picture had changed significantly by 2006 (Figure 5). Although the proportion of waste sent to incineration had stayed much the same, the percentage of waste being used as fuel dropped from 14% to 9% of all waste arising. The trend towards physico-chemical treatment continued to increase steadily: 12% of all waste arising was treated in this way, virtually all in Ireland^{3, 5, 19, 20, 23}.

This trend towards physico-chemical treatment was confirmed and maintained in 2007 (Figure 6) and all waste treated by physico-chemical means was treated in Ireland. While the proportion of hazardous waste sent for solvent recycling remained constant throughout 2004 to 2007, by 2007 the percentage of waste incinerated had dropped from 29% in 2006 to 18% in 2007. However, 11% of waste was sent for incineration abroad, while only 7% was incinerated in Ireland. Conversely, the percentage of hazardous waste recovered as a fuel increased back up to exceed 2004 levels. But this time there was a difference. Whereas in 2004, 2% of hazardous waste arising was used as a fuel in Ireland, by 2007, the amount of hazardous waste used as a fuel in Ireland considerably exceeded that exported for use as fuel abroad^{3, 5, 19, 20, 23}.

This analysis indicates that during the period 1996 – 2007, although a hazardous waste incinerator had not been established in Ireland, Irish industry and waste providers have been establishing their own solutions to hazardous waste management. Physico-chemical treatment facilities established in Ireland have obviously begun to offer a real solution for a small but steady portion of hazardous waste arising. Facilities around the country are clearly adjusting to take advantage of the high calorific value inherent in certain streams of hazardous waste. The reduction in hazardous waste disposed of by waste incineration, whether at home or abroad, accompanied by an increase in both the R1 stream and the volume of solvents exported for recycling, may indicate the use of fewer complicated chlorinated solvents in

manufacturing. Industry appears to be making a concerted aim to replace these chlorinated solvents with those which are simpler and easier to recover.

Now take a look at trends in the various methods of hazardous waste handling for those wastes staying in Ireland (Figure 7). While it appeared from the overall figures that on-site incineration had remained relatively constant and had only recently begun to reduce, analysing waste incinerated on site as a percentage of waste staying in Ireland, it becomes clear that by 2004, on-site incineration had actually begun to play a dominant role in the indigenous disposal of hazardous waste (Figure 8). In fact, in 2004, one quarter of the waste staying in Ireland was destined for on-site incineration. This is despite a background of decreasing reliance on on-site treatment/disposal methodologies. On-site solvent recycling too had begun to decrease, although clearly still far more important as a treatment methodology than indigenous off-site solvent recycling. In 2007, 15% of waste staying in Ireland was treated by on-site solvent recycling. In the same year, off-site solvent recycling of waste staying in Ireland increased to 2%^{3, 5, 19, 20, 23} (Figure 9).

For waste staying in Ireland, the most recent statistics indicate that much the same volume is treated on-site as that treated off-site²³. This is a significant marker for independent waste treatment facilities. What this indicates to me is that the waste industry is slowly responding to Irish manufacturing and service needs within the context of the legislation and the Principle of Prevention.

Until 2006, most hazardous waste exported was disposed of by incineration. In 2007, there was a significant change (Figure 10). In 2006, 25% of all hazardous waste exported was incinerated. The following year, 2007, this had reduced to 22% of waste exported. However, it was accompanied by a notable increase in hazardous waste landfill requirement. While 9% of waste exported in 2006 went to landfill (either D1 or D5), the proportion increased to 20% in 2007. The other significant increases for waste going abroad was for recovery as fuel, while there continues to be demand for overseas solvent recycling^{19, 23}.

So the percentage of hazardous waste produced in Ireland going abroad for treatment or disposal has started to decrease. The percentage of hazardous waste staying in Ireland and recovered off-site has begun to increase. Exports can be reduced further. At least some of that exported for recovery as fuel can be used in Ireland. For example, Irish Cement has signalled its intention to use a solvent-based fuel in the cement manufacturing process²⁰. Increases in indigenous solvent recycling have already been licensed but are not used. These can be activated so as to reduce the volume of solvents going abroad for recycling. The pharmaceutical industry now states its belief that the solution to hazardous waste lies not just in the safe disposal of pharmaceutical waste, but also in the production of less waste. There is growing realisation that advances, such as solvent substitution, the enzymatic catalysis of synthetic reactions and the recycling of by-products and waste, have the potential to increase efficiency and overall productivity³¹. Largely, it is down to individual companies to improve their performance of their own house with regard to waste reduction, so the EPA's move towards liaising with individual companies as proposed in the *National Hazardous Waste Management Plan*²⁰ should be a valuable step forward.

Waste prevention is not easy. It is tremendously difficult to decouple the generation of waste of any kind from economic growth. The EPA has noticed that “*the slow adoption of preventive measures, even when their benefits are well proven and known, demonstrates that achieving prevention is as much a socio-economic and psychological problem as a technical one*”.²⁰ Had a hazardous waste incinerator been constructed in the mid-2000s, what would

the trends now show? Would they show an increase in indigenous recovery of hazardous waste? Would they show a reduction in the volume of chlorinated solvents used by the pharmachem sector such that the solvents become more amenable to recovery?

I think not. It seems reasonable to me to assume that had an incinerator of the 50,000 t capacity for hazardous waste proposed by Indaver been established in the mid-2000s, there would be a significant increase in the volume of hazardous waste disposed of by incineration in Ireland, in fact, from 7% to about 23%. It seems reasonable to surmise that this might, as a realistic scenario, comprise all the waste currently exported for disposal by incineration, half the waste sent for solvent recycling either at home or abroad and half the waste sent for use as fuel either at home or abroad (Figure 11). The EPA itself has stated that “*diverting less solvent to recycling or for use as fuel in cement kilns would leave greater quantities sent for incineration, whether in Ireland or abroad*”²⁰. Obviously the distribution of hazardous waste for recovery would be in part dictated by convenience and in part dictated by the gate fee charged by the hypothetical Irish contract incinerator and it is impossible to guess precisely what that might be. However, what is clear is that without the incentive to look for alternative methods of waste management, neither the indigenous increase in waste recovery nor the apparent emerging pharmachem trend towards cleaner production would have happened (Figure 12).

Technologies presenting an alternative to the export of waste for disposal by incineration or for recovery by use as fuel are suggested by the EPA to be:

- recycling
- co-incineration and energy recovery in cement kilns or electricity/heat generation facilities
- incineration with recovery of energy.

However, the EPA cautions that the order of this presentation “*reflects the accepted waste hierarchy*”.²⁰ The proposed development comprises incineration with energy recovery and is therefore, of all the alternatives proposed by the EPA, that which responds least well to the waste hierarchy implicit in the Principle of Prevention.

Is this the right time for the establishment of the proposed development in Ireland

What the EPA says in the *National Hazardous Waste Management Plan*⁵ is true. There will always be a certain volume of hazardous waste which, regardless of how much can be recovered from the total waste stream, is likely to need thermal treatment of some sort. But if such thermal treatment comes too early, then the drive for continuous improvement in sustainable reduction and management of the hazardous waste stream will be lost. The need for this external driver is clearly recognised by the EPA²⁰: “*improvement may stop at this point and not progress further to prevention (as opposed to recycling) unless there are external drivers for continuous improvement*”.

Should, for example, a contract incinerator such as that previously proposed by Indaver for Ringaskiddy proceed to construction and operation, it would have provided capacity for the destruction of 50,000 t of hazardous waste. In the *National Hazardous Waste Management Plan*²⁰, the EPA calculates that, in 2006, the residual waste remaining for incineration even

with recovery of all solvent waste, would be almost 32,500 t. But should those hypothetical figures have been based on hazardous waste production in 2005, then there would have been 18,429 t of residual waste remaining for incineration. Or had it based the same calculations on waste production in 2004, there would have been 16,418 t of residual waste remaining for incineration.

Is it likely that the operator of this contract incinerator would have been happy to run his plant some 67% below capacity? Of course not. Should it be a co-incineration plant such as that which was proposed by Indaver, the operator could have filled the surplus capacity with non-hazardous sludge or industrial waste. But because these streams are non-hazardous and so generally amenable to a greater range of treatment/disposal methodologies, it is likely that the gate fees charged at the incinerator for non-hazardous streams would be lower than the gate fees charged for hazardous material. And so the plant operator would either fight for the preferential hazardous material by undercutting gate fees charged by alternative recovery facilities or accept the drop in profit. This would be entirely reasonable in a commercial market, but not reasonable at all if the Principle of Prevention is to be upheld. So until the country is certain of the capacity needed to accommodate what is truly residual waste, any thermal treatment plant for destruction of hazardous waste is fighting against the waste hierarchy and is consequently premature.

This is a time of uncertainty in hazardous waste production trends. The recent economic downturn will, at least to some extent, affect manufacturing. There will be a knock-on effect on hazardous waste production. In large part because their patents are running to an end on some of the industry's biggest sellers, the major pharmaceuticals are keen to diversify away from the core business of prescription medicines³⁰.

For some, that diversification is found in biotechnology. Many of the major pharmaceutical players in Ireland are investing in biotechnology plant: Wyeth, Pfizer (Ringaskiddy), Merck, Sharp & Dohme, Novartis, Eli Lilly, Elan. New plant such as Centocor and Genzyme, with a manufacturing process based entirely on biotechnology, have chosen Ireland as a manufacturing base. Biotechnology does not use solvents in the manufacturing process. Manufacturing residues encountered in biotechnology are far less tenacious than those typically encountered in the active pharmaceutical ingredient industry. Generally, nothing stronger than simple commodity cleaning agents are used in biotechnology³⁴. A significant industry-wide shift to biotechnology would see dramatic changes in the nature of Ireland's hazardous waste stream.

Even the EPA, formerly confident in its recommendation for a national hazardous waste incinerator to treat hazardous waste exported for incineration is sounding less confident: *"The decline in the reported export of waste solvents is particularly notable ... Exports decreased by 48% ... in 2004 to 48,462 tonnes in 2006. This reduction may affect the economic case for developing indigenous solvent treatment facilities ..."*²⁰.

Whether it is economics arising from this drop in exports, the limited market for recycled solvent in Ireland or some other undefined reason, only a fraction of licensed treatment capacity for solvent and other hazardous waste streams is currently utilised (Figure 13). In Ireland, four solvent blending/distillation facilities have been licensed with a total treatment capacity of over 70,000 t. Not even 2,000 t of this was used in 2006. Almost 24,000 t of treatment capacity has been licensed for healthcare risk waste. Only one third of this was used in 2006. Some 146,000 t of oil treatment capacity has been licensed for operation, but only marginally over half was used in 2006. But the proposed facility has assigned treatment

capacity for all three of these waste streams. In this regard, it is worth noting that the three facilities licensed to treat healthcare risk waste may not accept body parts, for which the only acceptable method of disposal is incineration. However, this appears to CHEPA to be a less than reasonable justification for establishment of a disposal facility when much already licensed recovery capacity has yet to be utilised.^{4, 6, 7, 8, 9, 10, 14, 15, 16, 20, 21}

The EPA has recommended commissioning of a study to investigate whether expansion of the commercial solvent recycling industry in Ireland should be actively promoted and supported. With specific regard to hazardous waste treatment, it advises of the support provided by Enterprise Ireland for commercialisation and development of technologies, products or processes that have commercial potential²⁰. What would be the point in developing new waste treatment technologies to the point of commerciality if there is a permanent demand for waste from a large disposal facility operating a well-established technology? How could those emerging technologies, fledgling in the marketplace, ever hope to compete on either scale, reliability or cost?

Pretreatment of specific waste streams is also a strong recommendation of the EPA. In particular, three of seven waste streams identified for pretreatment in the *National Hazardous Waste Management Plan*⁵ would be accepted for treatment in the proposed development. One such waste stream is contaminated agricultural plastic containers which, if pre-treated, could potentially be recycled. But if there is a ready outlet for contaminated agricultural plastic containers in a hazardous waste incinerator, what hope is there that the more expensive pre-treatment and subsequent recycling option would ever be commercially attractive?

Guidance on waste management in the UK advises that the pattern of facilities proposed for waste treatment should look forward in time but should “*not constrain movement up the waste hierarchy*”²⁹. We are firm in our belief that to grant planning permission for the proposed development at this time would be premature in the extreme and would not merely constrain, but would constrict movement up the waste hierarchy for hazardous waste management in Ireland. The effect of this constriction would be magnified several-fold by the ten-year planning permission for which the proposed development is seeking approval.

Does the proposed development respond to the Principles of Proximity and Self Sufficiency?

The Principle of Proximity advocates that waste should be managed close to the point at which it is generated, thus aiming to achieve responsible self-sufficiency. Under the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal¹, to which Ireland is a signatory, all countries should move individually towards this aim. Of course, the Basel Convention recognises that this may not always be possible and so, in a situation where a country does not have the necessary facilities to treat its own waste, it may do so in co-operation with the closest country offering suitable facilities. Similarly, Article 16 of the revised Waste Framework Directive²⁵ encourages self-sufficiency but recognises that it is likely to be achieved at a European Community level rather than at the level of the individual Member States.

There is no doubt but that the proposed development would permit Ireland an immediate reduction in exports of hazardous waste. Should it become operational, all exports of hazardous waste destined for disposal by incineration (i.e. those falling under the category D10) would be transported to Ringaskiddy for destruction. Current export levels indicate that

surplus hazardous waste capacity would still be available in the Ringaskiddy facility and so, if gate fees were attractive, it would be likely to attract at least some of the waste exported for use as a fuel or for recovery. This would bring the proportion of waste exported from 48% of all hazardous waste arising, as it was in 2007, to 32% of hazardous waste arising.

But this is not the whole story. The proposed facility would produce ash, some of which would be hazardous, some of which may be hazardous and some of which would be most likely to be non-hazardous. The rate of production of ash varies with the type of flue gas cleaning equipment employed. During the course of this oral hearing, the applicant has informed us that only the semi-wet+wet flue gas treatment option outlined in Table 4.6 of the EIS will be considered.

Let us assume that all potentially non-hazardous ash is actually non-hazardous and that the flue gas cleaning is by the semi-wet+wet option. Under such a scenario, some 23,500 tonnes of hazardous ash would be produced by the proposed facility each year. But as there is no hazardous waste landfill in Ireland, all this hazardous ash would have to be exported.

Still this is not the full extent of the potential picture. A 600,000 tpa incinerator has been licensed in Poolbeg, Dublin. Another 200,000 tpa incinerator has been licensed to Indaver in Carranstown, Co. Meath. Again, assuming that all the bottom and boiler ash from both these facilities is non-hazardous, both will employ flue gas cleaning which is anticipated to produce 24,000 t and 10,000 t of hazardous flue gas cleaning residues respectively each year^{11,22}. This too must be exported. And so, the proportion of hazardous waste exported for disposal would be 43% of all hazardous waste arising in Ireland.

Although there would be a reduction from the current situation of 48% hazardous waste export to 43% hazardous waste export, it must be remembered that this would be in the context of additional production of hazardous waste. We would now have a new waste stream which we did not have before, at least not in such quantities: hazardous ash. So assuming waste statistics in 2007 to be a baseline, the volume of hazardous waste arising would increase from almost 304,900 t each year to 362,000 t. And the volume of waste exported to landfill would increase three-fold, from 29,000 t to over 86,000 t (Figure 14).

In the context of increased hazardous waste production and reduced incentives towards pre-treatment and prevention, could the construction of the proposed facility justify the small decrease in hazardous waste exports? CHEPA thinks not. This is not what the Principles of Proximity and Self-Sufficiency are all about. Proximate management must be seen as a key objective to balance against other objectives. So, while there will indeed be a fraction of hazardous waste requiring disposal by incineration, it is CHEPA's opinion that to introduce that incineration before the Principle of Prevention has a proper chance to take hold is premature. Furthermore, CHEPA also believes that to introduce that incineration before Ireland can offer complementary hazardous waste landfill facilities is pointless in the context of the Principles of Proximity and Self-Sufficiency.

Does the proposed location promote the principles on which the Waste Framework Directive is based?

Let us suppose, as the applicant claims, that the proposed development does not hinder the Principle of Prevention – which in our opinion it clearly does – and that it is the right time for

provision of a hazardous waste incinerator in Ireland – which in our opinion it clearly is not. As one of the incinerators proposed by the development is to be a national facility, it is essential to examine the choice of location within the country so as to determine whether it furthers sustainable application of the Principle of Proximity.

The aims of the Principle of Proximity are to further the sustainability of waste management by:

- reducing the potential health, social and environmental impacts of the transportation of waste
- to help ensure that communities take responsibility for their own waste rather than passing it on to others²⁶.

It is proposed that the development be sited in Ringaskiddy. Ringaskiddy is a small town in the very south of the country (Figure 15). In fact, Ringaskiddy is 16 km further south than Cork on a peninsula stretching out into Cork Harbour (Figure 16). The peninsula is served by one road. The chosen site is at the very end of that peninsula (Figure 17).

So is this a suitable place for establishing a national hazardous waste facility?

Most hazardous waste arising in Ireland is generated by the pharmachem sector²⁰. Ringaskiddy is a centre for pharmaceutical manufacture of international significance. The industrialisation of Ringaskiddy began in 1969, when Pfizer constructed a citric acid plant in what was then a fishing village. The Pfizer Ringaskiddy complex is now the largest Pfizer production facility in the world outside the US. And since, as a general measure, about 200 kg of hazardous waste is generated per tonne of active ingredient manufactured by the pharmaceutical industry³², it is reasonable to assume that a great deal of hazardous waste is produced by the pharmachem sector in Ringaskiddy. To establish an incineration facility alongside this waste production would indeed be representative of the Principle of Proximity.

But there are other significant centres of pharmachem activity in Ireland. PharmaChemical Ireland, which represents the needs of the pharmaceutical and chemical manufacturing industries in Ireland within the Irish Business and Employers Confederation (IBEC), has a comprehensive members directory listing all of the major players in the Irish pharmachem sector³⁵. Grouping them together into reasonable geographical units indicates that there while the development would indeed be very well placed to serve the 22 pharmachem manufacturing plants in the South-West, South-East and Mid-West Regions, it is remarkably far removed from the 25 pharmachem manufacturing plants in the Dublin, Mid-East and Midland Regions (Figure 18). A national facility would surely aim to site itself at the centre of gravity of major waste production such that the impacts of transportation would be minimized (Figure 19). And while the environmental costs associated with transportation have been discussed briefly in the EIS accompanying the planning application for the proposed development, the risks and health and social costs have not been addressed at all.

The pharmachem sector is not the only sector of Irish manufacturing which produces hazardous waste. For the class of activity 8.1.0, i.e. the manufacturing of wood, paper, textiles and leather, the EPA has licensed 68 facilities. Most of these produce hazardous waste in varying quantities. While 27 plants are based in the South-West, South-East and Mid-West Regions, a further 23 plants operate in the Midlands, Mid-East and Dublin Regions and another 18 are based in the West and Border Regions (Figure 20, Figure 21). Of the 77

plants licensed in class 12.2.2, surface coatings, 39 are based in the Dublin and Mid-East Regions alone (Figure 22, Figure 23). These could not be considered to be proximate to the proposed facility. Chemical and pharmaceutical manufacturing facilities are licensed under class 5.7.0 (Figure 24). The location of those not members of PharmaChemical Ireland but for which hazardous waste is a by-product of their manufacturing process are indicated here (Figure 24). As is clear, the proposed facility is suitably situated to deal with those hazardous wastes arising from the 19 plants in the South-West, South-East and Mid-West Regions, but much further from the 43 plants further north (Figure 25).

More analysis is needed. Most of the manufacturing industries identified here produce hazardous waste. However, the volumes and types arising differ from plant to plant. Some have a hazardous sludge; others produce only fluorescent tubes, batteries and waste oil. It is necessary to identify the volumes and types of hazardous waste arising at each plant to accurately identify where the centre of gravity of hazardous waste production is in the country. This exercise should be a prerequisite for the establishment of any national hazardous waste facility. In the case of the facility proposed, there is no evidence that it has been done. However, what has been done here does indicate that Ringaskiddy is by no means proximate to all hazardous waste generating industry in the country.

The other aim of the Principle of Proximity is to help communities to take responsibility for their own waste. So let us examine using the most recently available statistics what waste leaves Cork for export to other EU Member States.

Regulating the movement of waste between countries is called transfrontier shipment and is subject to Regulation (EC) No. 1013/2006 on shipments of waste, transposed into Irish law by SI No. 419, the Waste Management (Shipments of Waste) Regulations²⁸. Under the Directive²⁵, hazardous waste or a waste which may potentially be hazardous may be exported only with pre-notification and prior written consent. In Ireland, Dublin City Council is the National Competent Authority for transfrontier shipment.

According to Dublin City Council's records, 46,166 t of waste was exported out of Co. Cork with transfrontier shipment documentation in 2007. Of this, 13,000 t was destined for disposal. It is reflective of the high solvent content of the material that 11,000 t was destined for disposal by incineration. However, nearly 4,000 t of the waste from Co. Cork exported for incineration was non-hazardous sludge. So hazardous waste destined for disposal by incineration exported from Co. Cork in 2007 was 7,177 t.

To put this in perspective, of all Irish hazardous waste exports in 2007, 15% came from Co. Cork (Figure 26). Of all hazardous wastes exported for disposal in 2007, 9% came from Co. Cork (Figure 27). Of those hazardous wastes exported for disposal by incineration, 12% came from Co. Cork (Figure 28). And of those hazardous wastes exported either for recovery as fuel or for disposal by incineration, i.e. R1 + D10, 27% came from Co. Cork (Figure 29).

While it is undoubtedly the case that some of the hazardous waste produced in Co. Cork is heading northwards, either via a waste transporter or a transfer station for export out of Dublin, the National Transfrontier Shipment Office has confirmed that the transfrontier shipment documentation pertaining to exports from Co. Cork is reflective of the vast bulk of hazardous waste produced by the pharmaceutical industry in Co. Cork³³. So if Co. Cork is responsible for 9% of all hazardous waste exports for disposal by incineration, then what is Cork's major centre of pharmaceutical production doing with its waste?

The answer is that it has already taken responsibility for it. Of those industries nearest to the site for which the development is proposed, Novartis has an on-site solid waste incinerator and an on-site liquid vapour incinerator, both of which treat such materials as aqueous washing liquids, organic solvents, filter cakes, spent absorbents, effluent plant sludges, solid wastes containing dangerous substances, various oils, spent activated carbon, boiler dust, fly ash, contaminated packaging, still bottoms and reaction residues, laboratory chemicals containing dangerous substances, organic wastes containing dangerous substances, linings and refractories and hazardous bottom ash and slag¹². Pfizer Ringaskiddy has focused its efforts on solvent recovery. It has two recovery towers in OSP3, two recovery towers in OSP4 and four recovery towers and a pervaporation unit in Production Services. It has also taken toluene from the Pfizer Loughbeg site for recovery, although with the recent change in ownership of the Pfizer Loughbeg plant, it is not known if this practice will continue¹³.

Pfizer Loughbeg returns the service by accepting a range of wastes from the Pfizer Ringaskiddy plant. Those which are hazardous include contaminated aqueous wastes, contaminated drums and solid waste containing dangerous substances¹⁸.

GlaxoSmithKline operates two on-site incinerators, both of which treat organic halogenated solvents, other unrecoverable organic solvents, washing liquids and mother liquors. It recovers solvent in three on-site solvent recovery plants¹⁷.

These are just some examples of how the major players in the pharmachem industry in Cork have already responded to the need for responsible hazardous waste management. If one of the key aims of the Principle of Proximity is to help to ensure that communities take responsibility for their own wastes rather than passing them on to others, then this proposed development clearly flies in the face of the Principle of Proximity. The Cork community has already taken responsibility for much of its hazardous waste. Certainly, there is still more to be done and many process improvements yet to be made. But the evidence of that on-going responsibility is four on-site hazardous waste incinerators, 11 on-site solvent recovery facilities and transfrontier shipment documentation indicating that hazardous waste exported from Cork for disposal by incineration is only 12% of that exported nationally for disposal by incineration. To place what would be a national hazardous waste disposal facility in the midst of this Cork Harbour community would be to pass on the responsibility of others to a community which has already taken its own responsibility in hand.

Conclusion

European waste legislation does not oblige Ireland to become self-sufficient in hazardous waste disposal. The European waste disposal market is open and competitive and, it is as acknowledged by the EPA²⁰, “*unlikely*” that it will become problematic to export hazardous waste to other EU Member States. Should Ireland decide to proceed with the construction of a national hazardous waste incinerator, then Article 9(a) of the Basel Convention¹ would be activated: Ireland could no longer export any hazardous waste for disposal by incineration.

On the contrary, European waste legislation does oblige Ireland to reduce the generation and hazardousness of the waste for which Ireland is responsible. CHEPA believes the most recent statistics available from the EPA indicate a gradual shift in favour of the Principle of Prevention. This has been achieved without a national hazardous waste incinerator. We believe it could not have been achieved with it. We believe that establishment of a national

hazardous waste incinerator now will strangle efforts towards further hazardous waste reduction and cleaner production. We further believe that establishment of a national hazardous waste incinerator now will constrict opportunities available to new and sustainable waste treatment technologies.

European waste legislation also obliges Ireland to treat waste close to its point of generation. Yes, Ringaskiddy is certainly closer than Germany or Denmark or the UK. But Ringaskiddy is not responsible for the vast bulk of Irish hazardous waste exported for disposal. And the site proposed, south of the southern-most city in Ireland, at the end of a cul-de-sac is most certainly not central to national manufacturing industry. Should the country go down the route of establishing a national hazardous waste disposal facility at this time (which CHEPA clearly considers to be unsustainable in the extreme) then careful analysis of the centre of gravity of hazardous waste generated needs to be undertaken. This has not been done, or if it has, it has not been demonstrated.

We stand at a crossroads in this country. The planning application for this proposed development represents the turn towards convention, towards business as always. The road in the opposite direction is headed towards waste reduction, hazard prevention, new technology, maximising recovery, even potentially towards placing Ireland on the world stage with regard to innovative treatments. This country owes its people the opportunity to take that road in the opposite direction. We ask An Bord Pleanála to refuse planning permission for this application for a facility in the wrong place, at the wrong time.

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