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**School of Applied Social Studies,
University College Cork,
Ireland**

Ireland and Incineration - A Very Long Engagement

Robert Corrigan, M.Soc.Sc. (Social Policy)

Abstract

The purpose of this report is to examine the effect the Energy-from-Waste (EfW) incinerator plant in Poolbeg, Dublin would have on the region and the country's waste management practices in general. Current legislation, which naturally contributed in shaping Ireland's waste management approaches, is analysed and their influence explained. In particular, the unreasonable and unnecessary stipulations in the Poolbeg contract are questioned. This paper is an abridged version of a longer thesis submitted to UCC in 2010. Following the conclusion of this report, recommendations are suggested which I trust would benefit the citizens of Ireland, the current government and provide the contract's signees with a stronger, more long-term future together.

Keywords: incineration, environmental, economic, negotiate

Introduction

Over the past five decades, environmental policy has slowly emerged as one of the key issues of debate within and between Western countries. The damaging effect past policies (or, lack thereof) have had on our planet has led to many nations scrambling to implement policy which should help limit the damage caused to our climate and environment, and reduce the use and waste of resources. Ireland's rate of environmental destruction and pollution has, in the past, been described by its EU

counterparts as neither the worst nor the best but a rapid growth in population, construction and consumerism throughout the 1990s and early twenty-first century have left many environmental commentators concerned that suitable policy was not drafted and implemented quickly enough to cope with such a sudden shock to a maritime nation. One major cause of environmental ruin is waste disposal.

Traditionally, waste has been disposed of in landfills throughout the country. Unfortunately, these landfills have been used for all manner of waste and as they reach their full capacity, many will soon be closed. As the only method of disposal, for both hazardous and non-hazardous waste, the environmental repercussions of this strategy may only begin to properly present itself in the coming years. Even now, the present impression left by these landfills warrants observation. Currently, Ireland has no regional incineration facilities, although there are eleven small industrial incinerators which focus primarily on the incineration of chemical and pharmaceutical products.

Incineration continues to be a contested topic throughout the country. As it stands, Ireland and Greece remain the only European Union (EU) members without municipal waste incineration and those aforementioned countries with Portugal are the only three without hazardous waste incinerators. Controversy arose following the start of construction of a municipal waste incinerator in Poolbeg, Dublin mid-December, 2009. Before construction commenced, the decision was met with extensive criticism and objection from environmental and health consultants and local residents and council.

As of May, 2010, the incinerators construction has been halted. It was originally expected to be completed and operational by 2013 at an estimated cost of €266 million. The final cost and expected time of completion is now unknown. The project is a joint venture between Dublin City Council (DCC) and private partner Covanta Ltd. The incinerator was granted license and approval by the Environmental Protection Agency (EPA), the planning board of Ireland, An Bord Pleanála and when completed will be one of the largest in Europe with a capacity of 600,000 tonnes. Construction commenced on December 14th, 2009 and stopped indefinitely on May

7th, 2010 over a licensing dispute. Additional research for the purposes of this paper confirmed that construction has not yet commenced, as of

March, 2011. The contract signed by Covanta Ltd and DCC is arguably the most controversial in Irish waste management history. The contract is worth €350 million to Covanta Ltd. over a period of twenty years. 320,000 tonnes of municipal waste must be incinerated every year for each of these years. If this quota is not reached, DCC will face a penalty and be expected to reimburse Covanta Ltd. under a 'put-or-pay' clause. This stipulation has been agreed upon by DCC and Covanta Ltd. It is estimated that for each tonne not supplied, a €100 fine applies.

Data Collection

This study was conducted using a qualitative approach to data collection and analysis. The data was gathered from a range of sources and sorted accordingly to different aspects of the examination. Analysis was ongoing throughout the research and writing of the original text. Research was conducted in person, on-line, and in libraries by reading and analysing interview transcriptions, books, reports, newspaper articles and archives, and policy documentation relating to environmental matters in Ireland, and in particular incineration.

Municipal waste incineration is still a relatively new element of Irish waste policy. Numerous books were written on the topic when incinerators were of a much lower standard than they are today, so were omitted from this study on the grounds of irrelevancy.

Incineration Policy

To appreciate how waste policy regarding incineration has evolved in Ireland, it is worth comparing the development of similar policy elsewhere in Europe. Ireland remains unique among EU states due to its reliance almost exclusively on landfills. Most other member states have incorporated incineration into their waste disposal programme, albeit to different degrees of success. Incineration remains a highly contentious topic of debate in Ireland yet has been a staple of waste disposal for many European countries throughout the same five decades. Virtually all of the waste disposal directives concerning incineration were introduced while Ireland was a

member of the European Union yet bereft of any incinerators so the policy held little relevance.

Despite a long and detailed history of incineration throughout the continent, environmental policy wasn't alluded to until 1959, when the first Community law was adopted (McCormack, 2001: 1). In fact, the environment wasn't even referenced when "The Six", Belgium, France, Italy, Luxemburg, the Netherlands and West Germany signed the 1957 Treaties of Rome, signalling the start of the European Economic Community (EEC). It was not until the political, economic and industrial decisions made during the 1960s led to changes in the environment that caused the leaders of the EEC governments to take notice and it was decided in October 1972 that the environment needed specific attention and management. Over the next ten years, 'more than 110 regulations, directives and decisions were adopted, covering issues as varied as water quality and the disposal of hazardous wastes' (ibid: 52). It is the latter issue that will be studied throughout this paper, with particular reference to incineration.

The Incineration Process

Incineration is the thermal oxidation of waste at temperatures in excess of 850°C, in some cases as high as 1,150°C. It is already used by a number of pharmaceutical and fine chemical plants in Ireland, yet the majority of these hazardous wastes are still incinerated abroad. There is no central facility for such wastes (FSAI, 2003). When incinerated, waste is reduced to 10 per cent of its original size and what is left is harmful ash which needs to be disposed of in a safe and responsible fashion due to the high level of dioxins. Dioxins, in particular, represent many people's greatest fear from incineration. The ash itself is transported to treatment plants, but when this option is unavailable it is often disposed of in landfills or used for building materials. The EPA estimates that incineration would contribute up to 17 per cent of dioxins if operational. The majority would be contained within the incinerator ash, with air emissions constituting approximately 1.8 per cent of dioxins. Dioxins form not from a single compound but from a mixture of different congeners which combine during high level combustions involving materials such as diesel, petrol, steel and wood. As per standard practice, many studies were conducted on the incineration process and the impact it may have on the health of the South East Dublin residents.

Environmental and Safety Concerns regarding Municipal Waste Incineration in Ireland

An Irish Reputation?

Leonard describes two main phases of environmental campaigning in Ireland (Leonard, 2005: 3). The first occurred during the twenty years from 1970 to 1990 where reaction focused on the state's prioritisation of multinational-led industrial development over the toll it may take on the environment. Until 1990, 93 per cent of waste in Ireland was disposed of in landfills. Geographically and often politically removed from the industrial heart of Europe, Ireland never developed suitable recycling or incineration technology, something that makes the country unique among the EU states. The EPA was established by the government in 1992 to handle environmental problems and affairs and although welcomed upon its formation it has received criticism for its dependant position on the government, who favoured economic progress above all else. The creation of the EPA is viewed as the second phase of environmental campaigning in Ireland, where issues including recycling, incineration and land filling took precedence over opposition to pollution created by multinationals. Despite the newly created EPA, environmental regulation was still unexplored territory for a country that had rarely prioritised or needed to prioritise such matters. The emerging economic interest in the country gave very little time for preparation and required almost immediate decision making. As expected, economic growth remained the key goal and environmental protection took second place. Although EU directives were clear, they were rarely enforced and Ireland's apparent indifference towards environmental concerns proved very attractive to US multinationals who hoped to expand their companies without suffering the stringent regulations imposed by the US government. Swift construction throughout the country led many multinational corporations to believe that 'all they had to do was fly in, do a deal with local elites, sign a few papers and build a drugs factory'. So common was this practice that Ireland acquired a reputation as a 'pollution haven' (Leonard, 2005: 51). This study aims to provide an insight into the genesis of the Poolbeg incinerator project, suggesting that when the plant was being seriously considered the economic climate was radically different, and the waste being generated was expected to increase at that same rate.

Incineration proposed

Along with the proposed effect incineration is expected to have on the economic climate, its environmental impact is championed both by its supporters and opponents. By April, 2006 the recycling of biodegradable waste was on the increase, yet the Government was still a long way off from meeting the legal European requirements for diverting waste away from landfills. The Landfill Directive (Council Directive 1999/31/EC of 26 April 1999) stated that the amount of land filled biodegradable waste must be halved by 2009. At the time, the amount being land filled was approximately 1.15 million tonnes. The *National Strategy for Biodegradable Waste* was released which set a target of diverting 85 per cent of garden waste, foodstuffs and paper away from landfill over the next ten years. Thermal treatment would play a substantial role in this strategy.

Incineration approved

November 19th, 2007 would prove a rather significant date in the Poolbeg saga. Following the approval of An Bord Pleanála's inspector, the board unanimously agreed upon the incinerators development, albeit with several conditions and recommendations. Most concerns were logistical or related with construction. They decided that most forms of construction could take place on a 24-hour basis but 'piling', a process which involves striking large steel girders into the ground was only permitted between the hours of 7am and 9pm. Also, any trucks carrying waste from Dublin's city centre are compelled to use the M50 motorway and the Port Tunnel. As mentioned earlier, at 600,000 tonnes, this municipal waste incinerator will be among the largest Europe has seen. The board made clear that any concerns regarding air and water pollution were unfounded and that the size of the plant was suitable. Curiously, one recommendation made by the board's inspector that the plant should be reduced in capacity by one sixth to 500,000 tonnes was rejected (Kelly, 2007).

Burning waste / Creating waste

At the time the research was conducted, no decision had been reached on what was to be done with the resulting ash from the Poolbeg incinerator. An engineer I interviewed who is involved in the plants construction informed me there would be no ash treatment centre as proposed incinerators in Meath and Cork had yet to be built –

‘when those three plants are operational, then you will have the economy to the scale that will lead to ash recycling in Ireland. But at the moment, there’s no ash to be treated and there’s no facility to do so and there’s no requirement in our building regulations to use recycled materials but then you’ll probably need to do a technical specification of the material as well, so architects in the coming years will be happy to use it.’

That all three incinerators would need to be built and operational before plans can commence on methods to cope with the harmful residue is what Dryzek (2005: 173) identifies as ‘weak ecological modernisation.’ This is where the solution reached for a deeply environmental problem is a technical one, in this case reusing the ash as a building product. Following the collapse of the housing market and construction industry in Ireland, it remains unlikely that such material will be needed in large quantities for quite some time. As it stands, the resulting ash is to be exported and treated on the continent. This plan seems unsustainable in the modern era. Some countries, including environmental ‘leader’ states such as Germany have closed their doors to their neighbours’ ash. The Basel Agreement was an international treaty signed by Ireland along with all but four of the world’s countries in 1989. It was designed to reduce the movements of hazardous waste between nations. As per step 2 of the agreement, one must ‘treat and dispose of hazardous waste as close as possible to where they were generated.’ This has two simple but important benefits. It reduces the risk of an accident or spillage during transportation and ensures that the costs of hazardous wastes disposed are borne by the generators of these wastes.

Safety Hazard

As stated previously, research into the potential health implications of the South East Dublin residents is essential before the plant can be fully operational. Unfortunately, few that have been carried out have been considered in depth or detailed enough to warrant the plant’s construction. Prof. Anthony Staines, a specialist in public health, health policy analyst and lecturer in Dublin City University condemned the Environmental Impact Assessment (EIA), the assessment upon which An Bord Pleanála granted their license, stating the report ‘doesn’t contain a proper assessment anywhere of the possible health impacts on those who live in the vicinity of it’ (Staines in Cooke, 2007).

Objections to a large industrial waste kiln are naturally expected, but it is still essential to understand the environmental hazards the construction of an incinerator could actually pose. Controversy persists regarding the size of the incinerator. DCC is committed to providing 320,000 of the 600,000 tonnes or face financial penalties under the 'put-or-pay' clause. Yet, the cost of not achieving this target could be greater again. Incinerators function most efficiently when there is a consistent delivery of the same amount of waste. The furnace's size is fixed but the temperature may drop if sufficient waste isn't supplied, resulting in the waste not burning to the optimum temperature and complete combustion not being achieved. As such, an incinerator always requires a supply of waste, oxygen and heat in a delicate constant balance. As noted by Gourlay (1992: 150):

The great dangers of incineration are thus that 1) not all hazardous substances are destroyed, and 2) in the burning process new products are formed, namely, the euphemistically named PICs, products of incomplete combustion, that may even be more dangerous than the original waste.

These products either escape into the atmosphere during burning or remain in the ash to contaminate landfill sites.

Economic Perils and Potential

The central dispute in the Irish incineration controversy is financial. Currently, financial repercussions threaten the plants contract, construction, opposition, customers and vicinity. The 'put-or-pay' clause in the contract means that DCC are obliged to contribute 320,000 tonnes of municipal waste annually to the plant or make up the difference financially to Covanta Ltd. in the form of a fee for every tonne of waste not reached. This fee will come out of the taxpayer's pockets, the customers for whom the incinerator is being built. Tens of millions have already been invested in the plant in the form of site acquisition, consultancy reviews, changes in private partner and labour force. Construction is several months behind schedule. Fines are accumulating from the EU due to Ireland's ever growing landfills and if construction is delayed any further, Covanta Ltd. may exercise their right to take legal action and sue the State for loss of earnings.

However, the emergence of potential financial benefits from the incinerator has been announced and will be explored in this study, including community funding, a possibly new competitive heating system, and the prospect of employment opportunities.

Energy-from-Waste / Money-from-Waste / Employment-from-Waste

One of the significant selling factors of the proposed incinerator plant at Poolbeg is, in fact, its name. The plant is, of course, technically referred to as an ‘Energy-from-Waste’ (EfW) plant. DCC have championed the plants ability to supply energy to 50,000 homes and distribute district heating to a further 60,000. This declaration has been met with support and scepticism in equal measure. RPS advised DCC to begin laying the necessary pipelines (rps.ie) yet it remains unclear from all parties how exactly this energy will reach the homes intended or how much energy would be generated.

Further to the possibility of supplying heat and electricity, the Ringsend community have been informed that they will receive a community gain fund of 3 per cent of the capital cost of the plant and €1 for every tonne of waste burned. This fund was a stipulation put in place by An Bord Pleanála on the 19th November, 2007 when the Board announced a unanimous decision to grant planning permission. The fund is expected to be invested into facilities for the community. Naturally, there were those who viewed the judgement with suspicion. One concerned resident I interviewed who is actively opposing the plant referred to the fund as ‘straight bribery. Or compensation for building a dirty plant.’

The ongoing worldwide financial crisis which began in 2007 has had a detrimental effect on the Irish economy, leading to the collapse of the Irish housing market, and generating massive banking losses and high unemployment. The construction of the Poolbeg EfW plant has been seen by some as a potential opportunity for a small employment boost. Scott Whitney, President of Covanta Europe, estimates that further to the increase in community gain and decrease in greenhouse emissions and EU fines, ‘over the next three years, approximately 500 people will be employed in construction and, upon completion, permanent jobs will be created and local businesses will benefit both directly and indirectly from the economic activity

associated with this project' (Whitney, 2010). The suggestion that employment could be a noticeable benefit from the plant's construction was discounted as further spin by the same 'concerned resident,' explaining that,

'A lot of people think they're going to get jobs. They're not. Because the people that run this plant will have to be highly skilled, highly experienced. They were saying for example, this is a good example of the EPA at work, they were saying, 'our plant managers could be people who run ESB stations, they can run this'. We said 'no they can't'. It's different; it's a comparable but different skill. The EPA has said the person who runs this plant must have ten years experience of incineration. Now again, they give their licence but if a guy doesn't have ten years experience, they won't let the plant go into operation.'

Conflicting Consulters

SLR Consulting (Ireland) Ltd, a leading and highly regarded environmental consultancy was drafted in to examine DCC's incineration reports, notably the ERSI report, '*Future Issues in Municipal Waste Management Policy in Ireland*'. It announced that many of the reports findings were flawed and misleading, that waste growth was over-estimated and that important economic decisions were made based on the economic performance of the country during the 'Celtic Tiger' phenomenon. Where Ireland's waste-growth was expected to rise by 1.3 per cent, it instead experienced a sharp drop of 5.1 per cent. Ireland's consumer culture and growing population during the 2000's resulted in an enormous increase in growth waste. Yet even the figures from other countries revealed Ireland to be considerably more careless than its nearest neighbours. While the world's economy grew rapidly from 2000 – 2007, our waste growth increased by an average of 4 per cent per annum, yet in Germany, Belgium, France and the United Kingdom, it fell by 0.1 per cent. The SLR also criticised the ERSI for assuming a direct correlation between GDP and municipal waste growth. As recycling, immigration and unemployment continues to increase in Ireland, these findings only contribute to scepticism of several aspects of the incineration project. SLR concluded that the required amount of waste for thermal treatment will be 300,000 tonnes by 2026 and will reach a maximum of 359,000 tonnes in 2037. The Poolbeg contract is for twenty years and 320,000 tonnes is expected to be burnt in 2013, in accordance with this contract.

Conclusions and Recommendations

This paper intended to highlight what a significant milestone in Irish waste management policy the construction of a national incinerator is and the difference it will make to Ireland's waste crisis over the coming years. The report's objective was to draw attention to the shortcomings of the agreements reached and how little adherence is made to already existing legislation.

If the incinerators completion is inevitable, the new, current government must realise that thermal treatment is one, but not the only, way forward if Ireland is to escape the waste crisis and EU fines. One such alternative is the little explored Mechanical Biological Treatment (MBT). Originally described as another waste management technique possibly used instead of landfill, MBT has since been promoted by some of its supporters as the only alternative, preferably in place of incineration. MBT involves many distinct procedures, including separation, composting and recycling. In contrast to land filling, biodegradable waste is removed and reused as soil, thus not contributing to methane emissions. Metal and glass materials such as coat hangers and light bulbs are separated from the waste and the remaining leachate (the liquid which runs to the bottom of a landfill into the soil) is not as hazardous because products such as paint and aerosols never reach the landfill. Under the EU landfill directive, biodegradable waste entering landfills was meant to have been reduced to 50 per cent last year. The state is currently paying the imposed fines.

Incineration is used by many developed and industrialised countries throughout the world. Nations such as Sweden and Denmark, often considered the environmental 'leaders' of the world have proven that when used responsibly along with minimisation, re-use and recycling, it is an invaluable method of disposal. The current government would be advised to study the contract between Dublin City Council and Covanta Ltd again and request re-negotiations regarding the 'put or pay' clause and the incinerators size. The 600,000 tonnes burner could be halved, thus halving the reliance, halving the transport needs and halving the resulting dioxins. It is unlikely the figure of 320,000 tonnes will be reached in this decade. The ERSI figures which influenced the capacity's size are not a true reflection of present day Ireland. Also, Ireland's recycling rates will continue to increase, without causing the taxpayer extra

expense. The remaining region of the site could be used as an ash treatment and storage site. This again would cut back on transport costs, needs and most importantly, risk.

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