OH Sub No. 65

Recd From: Mr Shipsey DCC

IN THE MATTER OF THE WASTE MANAGEMENT ACTS

AND IN THE MATTER OF AN APPLICATION BY DUBLIN CITY COUNCIL FOR A WASTE LICENCE PURSUANT TO SECTION 40 OF THE WASTE MANAGEMENT ACTS 1996 TO 2007 AND THE WASTE LICENSING REGULATIONS 2004

—

CLOSING SUBMISSIONS ON BEHALF OF DUBLIN CITY COUNCIL

Introduction

1. Dublin City Council (the "Council") would like to take this opportunity to thank the Inspector and the other Agency staff who have ensured the efficient running of the oral hearing over the last number of weeks. In addition, it would like to thank the participants who have, at their own cost and in their own time, gone to great effort to understand complex technical issues presented by experts on behalf of the Council. The Council has listened carefully to all the issues raised and will ensure that items of concern are brought to the attention of the City Manager.

2. In these closing submissions on behalf of the Council, it is not proposed to revisit in detail the evidence that has been presented on behalf of the Council, but to highlight certain issues that may require further clarification, to address issues that have been the subject of the objections, and to address queries of a legal nature raised in the course of the hearing.

Procedure

3. The Inspector is familiar with the legal and procedural rules which govern the oral hearing and the context in which the oral hearing has taken place and it is not proposed to describe this in detail, but only to outline in brief the background and relevant legislative provisions.

4. On 10 July 2006, the Council applied (on its own behalf and on behalf of the three other local authorities in the Dublin region[1]) to the Agency for the grant of a waste licence for the operation of a Waste to Energy ("WTE") facility on the Poolbeg Peninsula, Ringsend, Dublin 4.[2]

5. Article 13 of the Waste Management (Licensing) Regulations 2004 (the "Licensing Regulations") provides that *"Where development is proposed to be carried out, being development which comprises or is for the purposes of a waste recovery or waste disposal activity, and is of a class for the time being specified under article 93 of the Planning and Development Regulations, an application in respect of the relevant activity shall, in addition to the matters prescribed in article 12, be accompanied by three copies of an environmental impact statement prepared in respect of the said development".*

6. Article 93 of the Planning and Development Regulations 2001[3] prescribes the development identified for the purpose of section 176 of the Act of 2000 as that falling within the classes set out in Schedule 5 to the Regulations. The proposed WTE facility clearly falls within paragraph 10 of Schedule 5.[4]

7. A full Environmental Impact Statement (EIS) has been submitted to the Agency, comprising three volumes. Certain additional information has also been submitted to the Agency as part of the waste licence application process.

8. Section 40(2)(b)(ii) of the Waste Management Acts 1996 to 2007 (the "WMA") provides that in considering an application for a waste licence the Agency shall have regard to:

"(I) any environmental impact statement which is submitted to the Agency under and in accordance with a requirement of, or made pursuant to, regulations under section 45, in so far as the said statement relates to the risk of environmental pollution from the waste activity concerned.

---

[1] Dún Laoghaire – Rathdown County Council; Fingal County Council; and South Dublin County Council.
[2] EPA Reg. No. W0232-01.
[3] S.I. No. 600 of 2001. Article 93 falls within Part 10 of the Regulations, which is amended in parts by the Planning and Development Regulations 2006 (S.I. No. 685 of 2006). The Regulations of 2006 came fully into force on 31 March 2007.
[4] This class is the same as paragraph 10 of Annex I to the EIA Directive (as amended).

(II) any submissions or observations made to the Agency in relation to the environmental impact statement,

(III) such supplementary information (if any) relating to such statement as may have been furnished to the Agency by the applicant or licence holder under and in accordance with a requirement of, or made pursuant to, regulations under section 45,

(IV) where appropriate, the views of other Member States of the European Communities in relation to the effects on the environment of the proposed activity".

9. In relation to this last sub-paragraph, as pointed out by Mr. Matt Twomey in his evidence on behalf of the Council, the Member States recently expressed their continuing support for waste incineration by voting at European Council level that it should be categorised as a recovery activity under the Revised Waste Framework Directive, provided it meets certain energy efficiency standards.

10. In granting planning approval for the proposed WTE facility, An Bord Pleanála indicated its view that the information furnished to it in the EIS was adequate to allow it to form a view on the likely significant environmental effects of the proposal, and that the proposed development was not likely to have significant adverse environmental effects.

11. Section 40(4) of the WMA provides that the Agency shall not grant a waste licence unless it is satisfied, inter alia, that:

"(a) any emissions from the recovery or disposal activity in question ("the activity concerned") will not result in the contravention of any relevant standard, including any standard for an environmental medium, or any relevant emission limit value, prescribed under any other enactment,

(b) the activity concerned, carried on in accordance with such conditions as may be attached to the licence, will not cause environmental pollution,

(bb) [...]

(c) the best available techniques will be used to prevent or eliminate or, where that is not practicable, to limit, abate or reduce an emission from the activity concerned,

(cc) the activity concerned is consistent with the objectives of the relevant waste management plan or the hazardous waste management plan, as the case may be, and will not prejudice measures taken or to be taken by the relevant local authority or authorities for the purpose of the implementation of any such plan,

(d) if the applicant is not a local authority, the corporation of a borough that is not a county borough, or the council of an urban district, he or she is a fit and proper person to hold a waste licence,

(e) the applicant has complied with any financial provisions regarding waste recovery and disposal,

(f) energy will be used efficiently in the carrying on of the activity concerned,

(g) any noise from the activity concerned will comply with, or will not result in the contravention of, any regulations under section 106 of the Act of 1992,

(h) necessary measures will be taken to prevent accidents in the carrying on of the activity concerned and, where an accident occurs, to limit its consequences for the environment,

(i) necessary measures will be taken upon the permanent cessation of the activity concerned (including such a cessation resulting from the abandonment of the activity) to avoid any risk of environmental pollution and return the site of the activity to a satisfactory state."

12. The Council submits that the information that has been provided to the Agency in the EIS and in the waste licence application, together with the additional information provided prior to the Proposed Decision and the documentation and information provided in the course of the oral hearing, is more than adequate to allow the Agency to adjudicate on the matters within its remit and fully satisfies the above legal requirements.

13. In this connection, it is important to bear in mind that Environmental Impact Assessment is a dynamic process, rather than a single event. As Prof. Scannell puts it:

> "*A distinction must be drawn between an EIS and an EIA. The EIS is a document or documents and other information supplied by the developer or promoter of the project. The EIA is the procedure or process by which the significant environmental impacts of the project are assessed taking into account the EIS and other inputs into the EIA procedure, including further information provided by the developer, the comments of members of the public and other bodies concerned with the project by virtue of their specific environmental responsibilities...*"[5] (emphasis in the original)

14. This understanding of the dynamic nature of Environmental Impact Assessment is also to be found in *R. (Blewett) v. Derbyshire County Council* [2003] EWHC 2775 (Admin); [2005] J.P.L. 751, where Sullivan J. warned against unrealistic and unduly legalistic expectations by objectors as to the comprehensiveness of an EIS. He accepted that an EIS may be deficient in some respects and that the publicity and consultation processes exist to allow such deficiencies to be identified and rectified, so that the decision-maker is presented with as full a picture as possible.

[5] Scannell, *op. cit.*, para. 5-86.

The Proposed Decision

15. The Agency issued its Proposed Decision on the waste licence on 21 November 2007. The Inspector must now consider the objections and issues raised at the oral hearing in preparing her report to the Agency on the oral hearing. Section 44(3) of the WMA provides that:

"The person or persons appointed under subsection (1) shall make a written report on the objection or objections made under section 42(3) and the hearing to the Agency and shall include in the report a recommendation relating to the grant of a waste licence or a revised waste licence, as the case may be (including the conditions to be attached to such a licence) or to the refusal of such a licence."

16. Section 43(2) provides that:

"... where an objection has been made in accordance with section 42 (3) in relation to a decision referred to in section 42 (2) which it proposes to make, and has not been withdrawn, the Agency shall consider such objection and any submissions, plans, documents or other information and particulars furnished to the Agency in accordance with regulations under section 45 in relation to such objection and, where an oral hearing has been held in relation to the objection, to the report on the hearing, and as soon as may be thereafter the Agency shall decide to grant or refuse to grant the relevant licence in accordance with section 40 (1)."

17. The Council as licensee is, on the whole, very satisfied with the conditions contained in the Proposed Decision. During the course of the hearing the Council has expanded upon some of the evidence already submitted to the Agency in support of its waste licence application, with a view to responding to the issues mentioned in the An Bord Pleanála Inspector's Report and the third party objections to the Proposed Decision. The Council submits that the evidence presented to the oral hearing reinforces the correctness of the Proposed Decision. Other than questioning some of the detail of the careful scientific and other evidence submitted by the Council no credible scientific or other evidence has been presented such as to displace the Proposed Decision

of the Agency to grant a waste licence for the proposed WTE facility. The Proposed Decision is also legally consistent with earlier Decisions of the Agency in considering the licensing of Waste to Energy facilities.

18. Although the Council believes that it was apparent from its Application, and so understood by the Agency Inspector, it has clarified that it is seeking permission under the waste licence to accept a maximum of 600,000 tonnes of non hazardous waste. As part of this 600,000 tonnes, it seeks, subject to planning approval, permission to accept up to 80,000 tonnes of sludge, which would all emanate from the adjacent Ringsend Wastewater Treatment Works. It was acknowledged by the Agency Inspector in his report on the Council's waste licence application that *"it is prudent to provide for the destruction of these sludges in the application and the RD for the WtE facility in the event that such recovery routes cease to become available"*.

19. As explained during the course of the oral hearing it was unclear to the Council at the time of the waste licence application whether what is treated at the Ringsend Wastewater Treatment Works is properly classified as domestic or commercial (non-hazardous) sludge. The Council accepts that the Agency should refine the European Waste Catalogue (EWC) codes as outlined in Schedule A.1 of the Proposed Decision (Waste Categories and Quantities for Acceptance at the Incineration Plant) in accordance with the schedule of codes submitted by it during the oral hearing.

20. Some concern was expressed about the impact that sludge acceptance might have on energy efficiency of the WTE facility. The Council submits that such concerns are misplaced. As explained during the hearing, two types of sludge are produced at the Ringsend Wastewater Treatment Plant:

- Dried sludge at 92% dry solids and 8% moisture (heat dried); and
- Sludge cake at 25% dry solids and 75% moisture (belt press).

21. The dried sludge that is currently transported for spreading on agricultural land has a higher calorific value than the average municipal waste to be delivered to the facility. Should this dried sludge be treated instead in the

facility, the energy output would increase, costs and emissions associated with transportation will be removed and greenhouse gas emissions will be reduced. It goes without saying that in the event that land application is no longer possible, the type of sludge to be treated at the facility and the manner of insertion will be considered from a sustainable perspective to maximise efficiency and minimise emissions. There is international experience and expertise within the PPP Co in co-firing of MSW with sludge

22. Additionally, Mr. Brian Bahor on behalf of Covanta Energy Corporation ("Covanta") outlined the design and operational implications of accepting sludge at the facility. He stated and reiterated that, regardless of the sludge composition, the WTE facility will be designed and operated to comply with all conditions of the waste licence.

23. In its letter of 17 December 2007, the Council requested slight amendments to some of the conditions in the Proposed Decision for the reasons set forth in its letter and amplified upon during the course of the Oral Hearing. The Council respectfully maintains its position that all of these amendments are necessary and appropriate.

24. For completeness these are set out and repeated hereunder:

(a) **Condition 1.1.** Council Directive 2000/76/EC on the incineration of waste (the "Waste Incineration Directive") sets out over-arching requirements that apply to all incineration plants. There are a number of definitions in that Directive that are not repeated in the proposed licence. To ensure compliance with these requirements the Council suggests and submits that in the case of any ambiguity the waste licence should be read in the light of the Directive.

(b) **Condition 2.1.1.** An amendment has been requested to this condition to provide for and require ten years of power plant experience or incinerator plant experience rather than experience that is merely confined to incinerator plant experience. Mr. Bahor explained that an incinerator is of course a power plant and uses many of the same processes and equipment, and that experience gained at a power plant

together with incinerator plant-specific training would be equivalent to experience at an incinerator plant. It is unlikely that there are Irish residents with the necessary incinerator plant experience and this condition would unnecessarily rule out many Irish residents with equivalent experience. Covanta has undertaken to provide a rigorous facility-specific training program. In any case, Covanta is responsible for employing personnel that are able to maintain a facility in compliance with all required regulatory requirements.

(c) **Condition 3.5.3.** It is proposed to remove water from the wash-down of the waste reception hall and the bottom ash storage area from being re-used as process water. It was explained by Mr. Bahor that the waste water from the waste reception hall floor is of low quantity and low quality and would not be a suitable or practical source of process water. The proposed solution, in line with standard industry practice, is to dispose of waste reception hall water in the waste bunker.

(d) **Condition 3.15.2.** It is requested that the same hours should apply to waste acceptance and waste removal as there does not appear to be any advantage or logic to having different hours of operation for receiving and removal of waste from the WTE facility. Confirmation is also sought that the restricted hours of removal will not apply to removal of residues for transport by ship only. Flexibility is required in relation to the permitted hours for removal of such residues due to shipping and loading schedules.

(e) ***Condition* 3.19.** The Agency is requested to limit the requirement for shut-down in cases of abnormal operating conditions to the process line affected by those conditions. Furthermore, clarification is sought that the requirement to obtain the *"agreement of the Agency"* prior to re-commencing operations is intended to mean that a protocol will be established with the licensee/operator to ensure that the requirement to obtain such agreement does not delay unnecessarily the re-commencement of operation of the facility.

(f) **Condition 9.4.1.** It is sought to amend this condition to provide that the waste bunker must be evacuated within seven days (rather than three days) of the shutdown of the entire facility (rather than the entire facility or process line).

25. The Inspector requested additional clarification on the extension from a three-day to a seven-day storage period in the event of a shutdown, with specific reference to the generation of leachate and odour. The waste storage bunker has an estimated storage capacity of seven days to ensure that there is adequate waste available for operation of the facility in the event of any interrupted deliveries.

26. If for any reason one of the process lines were to be shut down or its use suspended, delivery of waste to the facility can continue until such time as the process line is brought back on-line, assuming there is still capacity in the waste bunker. The proposed amendment allows for waste to be stored at the facility up to the full capacity of the storage bunker, to prevent unnecessary direction of waste to landfill.

27. Section 5.6.14.of the Environmental Impact Statement (EIS) states:

"During normal maintenance only one of the two combustion lines will be shut down, leaving the other line fully operational to prevent any dust and odour emission by creating the sufficient negative pressure in the reception hall and waste bunker."

Section 5.6.11 states:

"The bunker will have sufficient capacity to store one week's normal throughput of waste. In the event of a shut down, waste deliveries will be controlled so that no wastes for incineration will be delivered to the plant if it cannot be placed in the bunker. This will be managed by communicating with waste suppliers, etc to control deliveries."

28. In the highly unlikely event of an extended shut down of the entire plant, it is submitted that the proposed three day period is unduly restrictive and could

pose operational, logistical and environmental difficulties. The proposed requirement to empty the bunker and transport the waste to landfill within three days would have environmental implications due to the double-handling of the waste. It is considered that the seven day bunker storage capacity is appropriate for handling planned and unplanned shutdowns of one or both process lines.

29. Section 5.6.10 of the EIS states:

"The incoming waste will be stored in the waste bunker. The bunker is indicated as item 3 in Figure 5.2. The bunker will be made of reinforced concrete and will have sealed surfaces. The bunker will be fully enclosed by walls and a roof. The bunker will be maintained under negative air pressure to ensure that odour or dust will not be emitted to the outside from the stored waste. No drainage system will be provided in the waste bunker, as any liquids will be absorbed by the waste in the bunker. When the waste is incinerated, the water will be released as water vapour in the boiler. Any contamination of the water will thus be caught in the flue gas treatment system."

30. In the event that both units are off line and the fans are operational the fans will be kept online to maintain the bunker under negative pressure. Any odours will then be discharged via the 100m stacks. During any brief period when the ID fan is not operational, other mitigation measures will be implemented to prevent the generation of odorous emissions. Such mitigation measures will include the following:

- the waste in the bunker will be sprayed with odour suppressing solutions to minimise odours; and/or
- a lime layer will be placed over the stored waste to prevent any significant emissions from the surface of the waste.

31. During unscheduled shutdown all individual waste delivery chutes to the waste bunker will be closed to prevent the escape of odours from the bunker area. All vents and access points to the waste reception hall will also be closed

thus preventing the egress of fugitive odour emission from the facility during this period.

Responsibility for the facility

32. In its submission to the Agency dated 25 January 2008, the Council provided a considerable amount of detail in relation to the very detailed contractual arrangements it has entered into for the purposes of the design, construction, operation and finance of the proposed WTE facility. It described how the service provider was selected through a rigorous procurement process, and how Covanta was also subjected to the same due diligence process before the Council approved it as a partner in the WTE project. Details were provided of the multiple mechanisms available to the Council under the Project Agreement to ensure that it has the ability to police PPP Co's performance and ensure and enforce the conditions of the waste licence and planning approval against it.

33. PPP Co is contractually obliged to provide sufficiently trained and competent staff as may be required by law (which includes the terms of the EPA licence) to perform the tasks associated with the Project Agreement. PPP Co is contractually obliged to comply with the conditions of the EPA licence, and in addition is obliged to comply with official guidelines indicating how a particular activity should be performed or what action should be taken in a particular circumstance, including official codes of practice or codes of conduct that might in the future be issued regarding incineration. Finally PPP Co must also comply with good industry practice. To establish good industry practice, the Council and PPP Co shall agree upon five waste to energy facilities which shall be used as indicators of good industry practice.

34. The Project Agreement provides that facilities shall be made available on site for the Authority's Representative. The Authority's Representative has unrestricted access to the site at *"all reasonable times"* during the contract period to perform his obligations. *"All reasonable times"* would, in the Authority's view, include any time during the operating hours of the facility, being 24 hours a day, unless for example for reasons of health and safety. The

obligations of the Authority's Representative include the exercise of the Council's rights under the Project Agreement.

35. Clarification was sought in respect of the obligation of PPP Co to *"co-ordinate"* environmental work. This obligation is subsidiary to the primary obligation on PPP Co, which is to *"procure that all aspects of the Project are subject to the Quality and Environmental Management Systems"* as specified in the Project Agreement and that they are complied with by its staff at all times during the contract period.

36. As stated by Mr. Matt Twomey in response to a query from the Inspector, the Council is the Applicant and will be the Licensee for the operation of the proposed WTE facility. The Council is also the '*operator*' of the plant within the meaning of the definition of *'operator'* in the Waste Incineration Directive, as it controls the plant. It will be granted the authorisation to operate the plant by means of the waste licence. In the Project Agreement with PPP Co, the Council has delegated responsibility for the day to day running of the facility to PPP Co or an approved operating company, with which the Council shall have a direct agreement. In the Project Agreement the PPP Co warrants with the Council that it shall operate and maintain the facility in accordance with, inter alia, the EPA licence.

37. Condition 2.1.1 of the Proposed Decision states: *"The licensee shall employ a suitably qualified and experienced (minimum 10 years in incinerator operation) facility manager who shall be designated as the person in charge. The facility manager or a nominated, suitably qualified and experienced deputy (minimum 5 years incinerator experience) shall be present on the facility at all times during its operation or as otherwise required by the Agency."*

38. The Council, as the *'operator'*, who controls the plant through the PPP Co, will employ a suitably qualified and experienced facility manager as required under the above Condition 2.1.1 of the Proposed Decision. The facility manager shall not be an *employee* of DCC for employment law purposes.

39. The Inspector also queried how the provisions of the WMA might apply in the context of the contractual arrangement between the Council and PPP Co. The WMA provisions are sufficiently broad to impose obligations on both the Council and PPP Co in relation to the holding and disposal of waste, the *"carrying on"* of waste disposal activities and compliance with the terms of the waste licence. For example, section 39(1) of the WMA provides that *"a person shall not dispose of or undertake the recovery of waste at a facility, on or after such date as may be prescribed, save under and in accordance with a licence that is in force in relation to the carrying on of the activity concerned at that facility"*. Section 39(9) further provides that a person who contravenes section 39(1) is guilty of an offence. Neither of these provisions would be confined in their application to the Council as the licensee.

Structure of PPP Co and financial guarantees

40. Dublin Waste to Energy Limited (PPP Co) is a joint venture between Covanta and DONG. The division of ownership within the joint venture company is 51% Covanta and 49% DONG. Any changes to the ownership of the joint venture company, other than a transfer of a limited percentage of further ownership from DONG to Covanta will require the consent of the Council.

41. The joint venture company may enter into contracts for the various elements that make up the project including the construction, the operation and the design. The Council also has the right to have a direct contractual relationship with any significant sub-contractor to the joint venture company, including in addition to those just mentioned the architect and the environmental adviser. Where the joint venture company contracts with any other party for such elements of the project, that party may be obliged to sign a warranty directly with the Council.

42. The Council has the right to "step in" and take control of the WTE facility or any aspect of it where it considers this is necessary to protect environmental interests or public safety. It also has the right to suspend the contract. In such situations it can step in and have a direct relationship with any sub-contractor in order to manage the facility itself.

43. The joint venture is obliged to provide a performance bond in the form of an on demand letter of credit to the value of €16 million. In addition, both DONG and Covanta are obliged to make unilateral loans to the joint venture company. Finally, the Council has parent company guarantees with Covanta's main holding company, (which has assets of over $4 billion.) That guarantee is provided in different tranches up to €250 million.

44. The most severe financial penalty for breaches by the joint venture of its duties would be termination of the contract and hand-back of the facility, which would have been paid for by the joint venture, to the Council. There is a mechanism in place in such a situation for determining the compensation payable to the Council or by the Council to the joint venture.

Plans and policies

45. The Agency is required to have regard to the policies and objectives of the Government in relation to waste management[6], to have regard to ministerial directions in relation to waste policy[7], and also to keep itself informed of the policies and objectives of public authorities whose functions have, or may have, a bearing on matters with which it is concerned[8]. Policy to which the Agency must have regard includes Government waste policy as issued by the Department of the Environment, the local authorities' Waste Management Plans, national policy documents such as the National Development Plan and the National Climate Change Strategy.

46. As noted above, section 40(4)(cc) of the WMA provides that the Agency must not grant a waste licence unless it is satisfied that:

[6] Section 40(2) of the WMA.
[7] Section 60(2) of the WMA.
[8] Section 52(2) of the Environmental Protection Agency Act 1992.

"the activity concerned is consistent with the objectives of the relevant waste management plan or the hazardous waste management plan, as the case may be, and will not prejudice measures taken or to be taken by the relevant local authority or authorities for the purpose of the implementation of any such plan".

47. The Council submits that the Agency is required to have particular regard to the Waste Management Plan that is now in force, since it states the current objectives and policies of the Council and the other authorities with regard to waste management.[9]

48. The policies to which the Agency is required to have regard were outlined in detail in the evidence of Mr. Matt Twomey on behalf of the Council. It is submitted that the policy statements as described by Mr. Twomey clearly and consistently favour the thermal treatment of waste and the location of a WTE facility on the Poolbeg peninsula.

49. At every level of the policy hierarchy, the necessity of developing an adequate infrastructure for the thermal treatment of waste is accepted. The more specific policy documents, the 2005 Waste Management Plan and the Dublin City Development Plan 2005 (which is deemed to include the objectives for the time being contained in the waste management plan in force in relation to the area) make express provision for the development of that infrastructure on the Poolbeg peninsula. The Waste Management Plan for the Dublin Region made on 11 November 2005 states:

> *"The policy is to develop a Waste to Energy (incineration) plant at the preferred location of Poolbeg Peninsula, Dublin 4."*[10]

50. At the higher level, it is sufficient for the purpose of these submissions to refer to the National Strategy on Biodegradable Waste, April 2006, which provides:[11]

---

[9] See in this regard *Boyne Valley & Newgrange Environmental Protection League Ltd v. Environmental Protection Agency* [2002] IEHC 24; [2002] W.J.S.C.-H.C. 1173 at 1192.

[10] Waste Management Plan for the Dublin Region, 2005, p. xvii; see also paragraphs 11.5 (p. 85), 18.8 (p. 144); Map 12; and Appendix F

> *"Thermal treatment with energy recovery in accordance with the internationally accepted waste management hierarchy is a key element of Irish waste management policy. The 10 Waste Management Plans for the regions/counties of Ireland recognise this integrated policy role of thermal treatment and facilities have been proposed by local authorities for the treatment of residual waste within 6 of the regions. This method provides a robust technology for dealing with mixed residual waste, and forms a necessary element in the integrated Waste Management Plans of the six regions, similar to models from other EU countries such as Germany, Belgium, Holland, Austria and Denmark."*

51. It is respectfully submitted that any attempt to reopen these policy statements cannot be permitted or entertained by the Agency. As a matter of law, the Agency has no such power and must take the relevant plans as it finds them.

52. The Programme for Government dated June 2007 was referred to in the submission of Deputy Ciaran Cuffe on behalf of the Green Party. This document constitutes the outcome of a political agreement between the newly elected representatives of the Green Party and Fianna Fáil, and was agreed between the parties prior to forming the coalition Government and prior to Ministerial appointments being made. The Programme for Government constitutes an indication of the legislation and policies which the political parties agreed to pursue during the lifetime of the coalition Government. It does not constitute waste policy to which the Agency must have regard.

53. The statement by Deputy Cuffe TD on behalf of the Green Party acknowledges that national waste policy is under review and that the Review will not be published until 2009. It is implicit in this statement that the Green Party accepts that Government policy has not changed. It is unlikely that Regional Waste Management Plans to take account of any new policy introduced will be in place before the end of 2010 or 2011. It should be noted in this regard that any new Government policy before being implemented will require a Regulatory Impact Assessment, including a public consultation phase. The statutory procedure for varying a Waste Management Plan involves

[11] §9.5.1.

a two-phased statutory public consultation process, which is likely to take a minimum of one year to complete.

54. The assumptions in relation to Mechanical Biological Treatment (MBT) being part of a new national policy and subsequently new Regional Waste Management Plans is either assuming a particular outcome to the Review or indeed prejudicing the outcome of several statutory processes in advance. Without prejudice to the Council's submission that the future predictions of what might happen in relation to waste policy are irrelevant to the Authority's considerations of a license, it is also acknowledged by Deputy Cuffe that Cork is the only Region with MBT included in its current Regional Waste Management Plan and it should be borne in mind that efforts to implement MBT in Cork since the mid-1990's have to date made no progress.

55. The future prediction of waste arisings presented by Deputy Cuffe, is based on what is referred to as *"a credible scenario whereby the total amount of residual waste nationally requiring treatment other than landfill or MBT (Mechanical Biological Treatment) falls short of the quantity of residual waste planned to feed the Poolbeg incinerator alone"*.

56. As the assumptions on which the analysis was based have not been provided, nor the identity of the author of the so called *"credible scenario"*, the Council is not in a position to comment in detail upon the prediction. However, in the Council's view the speculated scenario presented is not credible and the assumptions used are highly dubious, for the following reasons:

(a) The total national municipal waste arisings are projected to 2016 at 3,384,492 tonnes per annum. Neither the basis for this figure nor the assumptions on which it is based are provided but are wholly unrealistic as they include a significant *"waste prevention / reduction"* element of the order of up to 4-6% per annum. Published Reports from both the Agency and the European Environment Agency (EEA) consistently predict increases in waste arisings, not reductions. The 2006 EPA Waste Database recorded a waste increase of 11% from 2005. The EPA National Waste Report 2006 (cited in the Green Party

submission) notes the European Environment Agency (EEA) has predicted a 25% increase in municipal waste generation across Europe by 2020[12].

(b) The assumption of a national recycling rate of 49% is unrealistic. Dublin has achieved 40% to date and this is due to increase by a few more percentage points with the roll-out of the brown bin. To extrapolate the performance of our larger cities to a national figure to include rural areas is misplaced and is not borne out in the national recycling rates of leading recycling countries such as The Netherlands, Denmark or Austria.

(c) The assumption that MBT is an equivalant treatment to thermal treatment in terms of meeting the requirements of the EU Landfill Directive is also false. Incineration provides 100% diversion of biodegradable waste from landfill (the core objective of National Waste Policy), while the introduction of MBT would in fact increase the net landfill requirement. The experience in Austria and Germany with MBT is that some 50% of the waste goes to landfill (or incineration where it exists).

(d) The Programme for Government target of 10% landfill is impossible to meet without thermal treatment. The Regional Waste Management Plans show at most a reduction to 15% to 20% landfill even with the introduction of thermal treatment, which minimises landfill to the greatest extent.

(e) The assumption that the introduction of MBT can be facilitated quickly in time to meet the requirements of the EU Landfill Directive is not valid. Even if the Regional Waste Management Plans were altered in this respect, the planning and regulatory periods required (assuming little public opposition to MBT) would cause Ireland to fail to meet EU targets.

---

[12] EEA Briefing 01/2008 Better Management of Municipal Waste will reduce Greenhouse Gas Emissions.

Need for the facility

57. Objectors have questioned the need for the facility, suggesting that other methods of waste recovery / disposal (notably Mechanical Biological Treatment) combined with maximising recycling, would be a preferable alternative and would obviate or reduce the need for thermal treatment.

58. The Council is not required in applying to the Agency for a waste licence to prove the need for the facility. This was dealt with in detail in Chapter 3 of the EIS and in evidence presented at the oral hearing before An Bord Pleanála. The Council's evidence in this regard was accepted by the Board in granting planning approval for a WTE facility with maximum capacity of 600,000 tonnes.

59. Mr. Twomey pointed to practical imperatives that require the urgent development of an adequate thermal treatment infrastructure. This infrastructure is higher on the waste hierarchy than landfill, and is required to enable the four Dublin authorities to meet targets under the Landfill Directive to divert waste from landfill. Although some objectors have suggested that a zero waste policy should be implemented instead, the evidence is that, under all conditions, there is likely to be a very significant amount of residual waste that must be dealt with even if the current waste policy was altered. The Council is convinced that thermal treatment provides the most satisfactory and practical solution. It is a proven and safe technology, and in widespread use across the EU.

60. Mr. Twomey has also given evidence that the facility is required to cater for future waste arisings in the Dublin region. As for the capacity of the proposed facility, the rationale for 600,000 tonnes per annum capacity for the Dublin Region was clearly articulated by Mr. PJ Rudden in his evidence to the An Bord Pleanála oral hearing in 2007[13].

61. The strategy and scale of the proposed WTE facility at 600,000 tonnes per annum is well grounded in EU and national waste policy and is essential to

[13] Available on the Agency file.

meet the current and future development and waste arisings of the Dublin Region.

Planning and land use

62. Issues relating to proper planning and sustainable development were raised on several occasions during the oral hearing. Such issues were investigated in detail at the An Bord Pleanála oral hearing in April 2007. In granting planning approval for the facility, An Bord Pleanála has accepted that the site is appropriately zoned for the proposed development. The Agency is not the competent authority to deal with planning matters.

63. It is not within the remit of the Agency in considering this waste licence application to assess potential impacts on future residential development on the Poolbeg Peninsula, plans for which are currently in the very preliminary stages. Any implications with regard to siting of residential development adjacent to the proposed WTE facility will be addressed and dealt with as part of the statutory procedure for approval of the planning scheme and in preparation of the EIS in respect of the planning scheme.

Traffic

64. Traffic issues were raised by several objectors. It is submitted that such issues are not within the remit of the Agency when considering an application for grant of a waste licence. In any case, traffic impact is addressed in Chapter 7 of the EIS and further evidence was presented at the An Bord Pleanála hearing[14], to the effect that there will be a very minimal impact on traffic as a result of the facility.

Energy efficiency of the facility

65. The WTE will operate at 29-30% net energy efficiency. Several examples of facilities operating at similar levels of energy efficiency were presented by Claus Norgaard of DONG to demonstrate that this standard is achievable. Facilities presented included combined heat and power plants that generate much higher efficiencies when producing both electricity and heat, and would

[14] This evidence is on the Agency file.

provide comparable efficiencies to the WTE facility if generating only electricity. Conversely, the WTE facility will also generate significantly higher efficiencies when generating both electricity and district heating.

66. The flue gas emission rate used for modeling described in Section 8 of the EIS included a typical condition that is consistent with continuous operation at maximum heat capacity and a maximum condition that is 15% above typical. These are considered to be conservative values for the purpose of estimating pollutant emission rates and ambient impacts.

Design of the facility

67. The WTE facility will be designed in accordance with the Best Available Techniques Reference Document (BREF) on Waste Incineration[15] to achieve compliance with the conditions of the waste licence and the Waste Incineration Directive, including the requirement for automatic shutdown of waste feed and startup of auxiliary fuel when the temperature drops below prescribed limits.

68. Both Covanta and DONG will be involved in the design of the WTE facility. It is in the best interests of the operator to be involved as it must be satisfied that the facility is designed to a standard that will enable compliance with the Waste Incineration Directive and the waste licence over the long term.

69. If unacceptable waste is received, the facility will have a number of mechanisms and measures for dealing with this, including TV monitors and visual inspection in the waste reception hall, crane operator and control room. There will be stringent procedures for dealing with waste deliveries of unacceptable waste to prevent reoccurrence.

70. As required under the Proposed Decision (Condition 3.5), an impermeable Waste Inspection Area and a Waste Quarantine Area will be provided and maintained at the facility. Furthermore, prior to commencement of waste acceptance at the facility the licensee is required to submit to the Agency for

[15] The Reference Document on the Best Available Techniques for Waste Incineration dated July 2005 published by the European Commission.

approval detailed written procedures for the acceptance and handling of wastes, including waste inspection at the point of entry to the facility.

Air quality

71. Air quality is dealt with in detail in Chapter 8 of the EIS and the associated Appendix.

72. As explained by Dr. Edward Porter in his evidence, the air quality impact of the proposed WTE Facility was assessed using the USEPA approved air dispersion model AERMOD, in conjunction with a SCREEN3 model in order to assess the possible impact of shoreline fumigation. Further to the suggestion in the report of Mr. Brian Broderick prepared for the An Bord Pleanála Inspector and in response to third party objections to the Proposed Decision, the Council has carried out further modeling using CALPUFF, which is the USEPA approved air dispersion model for use in complex meteorological zones. This was done in order to evaluate the results arising from AERMOD and SCREEN3 and the conclusions drawn in relation to compliance with the ambient air quality standards.

73. As explained in submissions during the hearing, the Council is not seeking to rely on the CALPUFF modeling. The Council stands over the results and conclusions drawn from the original modeling carried out using AERMOD and SCREEN3. The CALPUFF modeling was carried out as a "sensitivity test" due to issues raised by objectors at the An Bord Pleanála hearing and by the An Bord Pleanála Inspector, in particular with regard to the possible occurrence of shoreline fumigation. CALPUFF was run independently by Dr. Porter as well as by Mr. Joe Scire, the primary code developer of CALPUFF and an internationally recognised expert on CALPUFF and other air dispersion models. The results achieved by both Dr. Porter and Mr. Scire were essentially identical and bear out the findings of the AERMOD and SCREEN 3 results.

74. As stated by Dr. Porter in his brief of evidence, the results derived from the CALPUFF and the AERMOD and SCREEN3 assessment clearly show that the ambient air quality standards will not be exceeded. The results show that

the combination of stringent emission limits laid down in the Waste Incineration Directive and the selected stack height are appropriate and adequate in ensuring that the ambient air quality standards are not exceeded. In addition, Dr. Porter demonstrated that no ambient air quality standards will be exceeded under shoreline fumigation episodes according to results derived from both SCREEN3 and CALPUFF.

75. Dr. Porter demonstrated that the WTE facility, once operational, will comply with the requirements of the Waste Incineration Directive and the Proposed Decision in relation to PM_{10} and $PM_{2.5}$. The recently adopted Directive on Ambient Air Quality and Cleaner Air for Europe[16] outlines proposals to set new ambient standards for $PM_{2.5}$, with a concentration cap of 25 µg/m3 as an annual average (to be attained by 2010). Dr. Porter's assessment assumed that all dust emissions from the facility were emitted as $PM_{2.5}$ with ambient ground level concentrations significantly below the air quality standards for $PM_{2.5}$ under both typical and maximum operation of the site. No adverse environmental impact is envisaged to occur under these conditions at or beyond the site boundary. Emissions at maximum operations equate to an ambient $PM_{2.5}$ concentration (excluding background concentrations), which is less than 1% of the annual limit value at the worst-case receptor.

76. Dr. Porter demonstrated in his evidence that the trend over the last four years in relation to background levels of PM_{10} indicates a gradual decrease in annual average from a level approaching 36 mg/m3 in 2004 to approximately 30 mg/m3 in 2007. In accordance with this trend, background levels of PM_{10} in 2012 are predicted, using an accepted prediction formula, to be in full compliance with the ambient air quality standard.

77. Mr. Bahor explained in detail that the WTE facility will include a variety of particulate control devices starting with the combustion process and continuing through to the two air pollution control systems. Fine and ultra fine particulate will be controlled including both organic and inorganic components. There is no scientifically accepted evidence to suggest that such particles emitted from incinerators have any adverse health consequences.

[16] COM (2005) 447.

This issue is dealt with further under the heading *"Human Beings and Health"* below.

78. Objectors have expressed concern that insufficient consideration has been given to the possibility of high-rise development taking place on the Poolbeg Peninsula in the future, with reference being made to the Council's draft strategy document *"Maximising the City's Potential – A Strategy for Intensification and Height"*[17]. Dr. Porter has carried out modelling at upper levels including the Point Village, the U2 Tower, the site of the proposed Fabrizia development (for which permission has been refused), and has found that there will be no exceedences, and that the levels at those locations are significantly below those of the worst case receptor.

Climate

79. Chapter 8 of the EIS and the evidence of Dr. Porter show that thermal treatment of waste is a better option from a climate perspective than landfill under almost all modelling conditions and that the WTE facility will make a beneficial contribution to Ireland's obligations under the Kyoto Protocol. Dr. Porter concluded in his evidence that the WTE facility would produce a net benefit of between 0.02% - 0.22% of the total greenhouse gas emissions in Ireland in 2010, and that this would rise to 0.30% with the implementation of a comprehensive district heating scheme.

80. The Council is confident that district heating will be developed using the energy from the facility, thus increasing the energy efficiency to 90% and facilitating other industrial and commercial sites to develop district heating sources to the benefit of Dublin and the environment.

Residues

81. The treatment of residues from the waste incineration process is dealt with in Chapter 10 of the EIS.

[17] It should be noted that the draft strategy makes no specific reference to plans for high-rise development on the Poolbeg Peninsula.

82. Objectors have questioned the feasibility of exporting bottom ash for recovery. Although this is an activity beyond the limits of the site that will be subject to the waste licence, Mr. Twomey explained the assurances from the PPP Co that there are several potential treatment facilities for bottom ash in continental Europe and the UK to which it can be sent for recovery. Ferrous and nonferrous materials will be removed and the remaining bottom ash processed to yield an aggregate that is presently being used throughout Europe for a variety of civil applications including road bed and block construction.

83. The bottom ash from the Dublin WTE facility will undergo all applicable testing required by the waste licence and the operator of the facility will be required to comply with any conditions imposed by law in relation to the transfrontier shipment of waste.

84. Objectors have questioned the methods that will be employed for loading of bottom ash and fly ash onto ships. Again, whilst this is not an activity with which the Agency is concerned as it takes places outside of the site boundary, Nevertheless Mr. Bahor provided information in relation to the probable methods that may be employed for loading and unloading of ash. He explained that trucks from the WTE facility would discharge bottom ash directly into a covered feed chute into a conveyor for transport from the loading area to the ship's hold. The conveyors would be fully enclosed to prevent bottom ash spillage and the generation of fugitive dust. The potential for fugitive dust during the loading operation is minimised by the moist nature of the bottom ash.

85. Mr. Bahor further explained that flue gas treatment residues (FGTR) will be exported in dedicated sealed containers as described in the EIS. Containers loaded at the WTE facility will be transported by truck to the nearby container terminal operated by Marine Terminals, a major terminal operator at the Dublin Port that is licensed to handle containerised hazardous material. FGTR will be exported to a location in Europe for treatment and placement in disused quarries or depleted salt mines, which are typical methods for managing this material.

Water

86. The effect of the proposed facility on water has been extensively considered and modelled. As presented in the evidence of Mr. Hans Jacob Vested and Ms. Dorte Rasmussen, the prediction is that there will be no significant impact on aquatic life as a result of either the thermal plume from the cooling water discharge or the release of biocides into the channel.

87. It was submitted by objectors that the River Liffey is an important salmonid river. The Council accepts that, although the river is not designated as *"salmonid water"* for the purposes of the Salmonid Regulations[18], salmon do pass through the River Liffey Estuary as part of their migration. For this reason the Council has assessed the impact of the thermal plume from the facility in accordance with the standards set down in the Salmonid Regulations. In response to concerns in relation to salmon migration, Mr. John Brophy stated his view that, based on the evidence presented by Dr. Han Jacob Vested in relation to thermal impacts, migratory fish would not be impeded in their migration through the River Liffey Estuary by the thermal plume from the proposed WTE facility. Mr Brophy referred to evidence in relation to the Severn Estuary in the UK, which demonstrated that no harm was caused to salmon smolt even where the thermal plume extended for the entire cross-section.

88. The Inspector queried whether the increase in temperature of the cooling water would have any impact in terms of the efficiency of the cooling water system. It is predicted, based on PPP Co's experience in operating other WTE facilities using similar systems, that any impact on efficiency would be negligible.

89. A query was raised by Ms. Lorna Kelly in relation to the amount of potable or grey water that would be required for operation of the WTE facility. It was suggested that the process water demand of 400,000 tpy (m^3/year) would exceed the available supply of "grey water" during a future drought and thus necessitate the use of large quantities of city mains water.

[18] European Communities (Quality of Salmonid Waters) Regulations 1988 (S.I. 293/1988).

90. Reference was made to the relevant sections of the EIS, which confirm that the amounts of water required by the facility will not be significant, even in a period of drought and the facility's requirements amount to a small fraction of the actual output from the Wastewater Treatment Works.

Ecology

91. Issues in relation to ecology have received extensive treatment in the EIS and have been further addressed in the evidence of Dr. Fergal Callaghan, Mr. John Brophy, and Ms. Eleanor Mayes. No significant adverse effects are predicted in relation to terrestrial, acquatic or estuarine ecology.

92. An issue was raised in relation to the temporary construction compound. The construction compound is part of an area of made ground, and is currently classifiable as spoil and bare ground habitat ED2, using the Heritage Council Guide to Habitats in Ireland definition. This area does not provide feeding habitat for waterfowl. The grassland located south of the Ringsend Wastewater Treatment Plant does provide feeding habitat for Brent geese, and small numbers of other waterfowl species. The entire area currently occupied by spoil and bare ground habitat was used as a construction compound for the Sutton to Ringsend submarine pipeline until 2003.

93. Three freshwater streams flow into South Dublin Bay, and these are the main sources of fresh water used by waterfowl in the South Bay for bathing and as sub-roosts, although small numbers of birds will occasionally use temporary pools in public parks, in the grassland located south of the Ringsend Wastewater Treatment Plant, and in an area some 200 metres to the west of the WTE temporary construction compound where surface water pools following prolonged rainfall. The main high tide roosts used by waterfowl in South Dublin Bay are the sand bars and embryo dune between Merrion Gates and Booterstown.

Human beings and health

94. Although there has been considerable discussion at the hearing concerning the possible effects on human health of the proposed development, it has been

entirely based on unsubstantiated and largely unscientific speculation, rather than evidence. There was much speculation about the alleged potential health effects of ultra-fine particulates, but no credible or reliable evidence was adduced to connect any such alleged risk to modern incinerator plants. It is also important to note that Professor Montanari's material did not contain any case studies that came close to meeting the standards of an epidemiological survey and the presentation did not represent any correlation with a modern WTE facility.

European Environmental Agency Report – "Air Pollution in Europe 1990-2004"

95. In contradiction to the speculative presentation of Professor Montanari the above report presents a comprehensive review of air pollution in Europe between 1990 and 2004. Of particular interest is Figure 3.12 on page 38, which summarises observations of $PM_{2.5}$ in 17 countries in Europe for 2004. The graph shows the extremely low levels of $PM_{2.5}$ concentration in Ireland in comparison to several other countries. It is also clear from the map at Figure 3.14 that PM_{10} concentrations in Ireland in 2004 were far lower than in most other European countries. Mr Ed Porter demonstrated that the measured particulate levels in the area of potential impact from the proposed WTE facility have decreased since 2004 and that, according to this trend, they will continue to fall between now and 2012.

96. Figure 2.1 on page 19 illustrates the relative contributions of the main economic sectors to the main air pollution issues (based on 2004 measurements). The sectors represented are as follows:

(a) Energy industries

(b) Manufacturing industry

(c) Commercial and institutional services and household

(d) Road transport

(e) Off-road transport

(f) Agriculture

(g) Waste (including incineration and waste-water management)

The contribution of waste to particulate matter pollution in 2004 was 1%, compared to 28% from energy industry, 17% from manufacturing, 10% from commercial/institutional services and household, 22% from road transport, 9% from off-road transport and 13% from agriculture. In each of the other categories of pollution measured (acidifying substances, eutrophying substances and ground-level ozone formation precursors), waste contributed only either 1% or 2% of the overall level.

97. Figure 2.4 illustrates the total particulate emissions by economic sector for EEA country groupings in 2004, and contributions from each sector and pollutant to total change since 1990. Again, waste represents 1% of the total emissions in the EU-15.

Evidence of Professor Howard

98. Professor Vivienne Howard's presentation focused on the origin, distribution and fate of general pollutants, and was not directly or even tangentially relevant to the proposed WTE facility or indeed any incinerator. He presented his interpretation of a largely undisclosed evidence base which cannot be applied to the proposed WTE without elaborating on pollutant type, concentration, mode and level of community exposure. All of this information is provided within the EIS, concluding that the proposed WTE will pose no significant risk and will comply with EU and WHO standards set to protect health.

99. Mr. Howard failed to recognise that:

(a) As described in detail by Mr. Bahor, regulatory controls on waste incineration and improvements in flue gas cleaning (through use of bag filters) have resulted in significantly lower emissions of dioxins from WTE facilities. As a consequence, environmental levels have substantially declined over the last decade.

(b) Potential risk to health is determined on a project basis through regulatory assessments such as Environmental Impact Assessment (EIA). One aspect of the EIA models the environmental fate of key pollutants (including dioxins) to determine the dispersion of pollutants and potential human exposure via inhalation, ingestion (via locally grown or reared foods and soil) and absorption through skin. In this instance, the EIS for the proposed WTE facility demonstrates that, applying the worst case scenario, background levels will remain significantly below the EU tolerable weekly intake level for dioxins and furans.

100. Mr. Howard referred to two papers (by *Wang et al.* and *Tejima et al.*) representing the performance of municipal solid waste combustion facilities in Taiwan, with the conclusion that dioxin and furan emissions during periods of startup and shutdown can be greater than the emission limit values in the Proposed Decision. What he failed to say was that a review of these papers reveals that the design of the cited facilities is far inferior to the design proposed for the proposed WTE facility and that these facilities would not meet the conditions of the Proposed Decision. There were significant technical issues that would not comply with Best Available Techniques including, for example, failure to attain necessary flue gas residence time and temperature, and by-passing of the bag-house during startup and shutdown operations. Therefore, neither of the cited papers can be used to estimate emissions from the proposed WTE facility during startup, shutdown or normal operating conditions.

101. The Council wishes to draw the Agency's attention to an in-depth literature review that was prepared on the health effects of waste to energy plants by a leading and internationally recognised expert toxicologist, Professor Dieter Schrenk, for the purposes of the An Bord Pleanála hearing. The review concludes that *"there is no single peer-reviewed study showing that modern Municipal Waste Incinerators release hazardous substances at a level causing any harm to the people in the vicinity"*.

UK Health Protection Agency statement

102. The UK Health Protection Agency in November 2005 provided a statement in relation to the health effects of Municipal Solid Waste Incineration. The Council submits that this statement issued by the body responsible for protecting UK public health is of considerable authority. The full text of the statement was submitted to the Agency during the oral hearing, however it is worth quoting some particular pertinent sections of the statement:

"Since 1996 there have been significant cuts in emissions from incinerators in order to meet strict European Union legislation. This has led to the phasing out of the older, more polluting plants as new emission and operation standards were introduced. As a result contemporary facilities are substantially less polluting and modern abatement technology will help reduce the hazard from emissions provided that the facilities are properly operated at all times.

The European Union Waste Incineration Directive (often termed 'WID') 2000/76/EC will further reduce the potential to pollute... Compliance will mean further significant reductions in the emissions of key air pollutants (such as nitrogen oxides, sulphur dioxide and hydrogen chloride, as well as dioxins and furans). As well as stricter emissions limits, this Directive also requires better management systems and increased monitoring of emissions.

The Waste Incineration Directive will therefore impose stricter operating conditions and emissions standards and so further reduce the potential human health impact. This should ensure that public health effects are unlikely.

...there is little evidence to suggest that incinerators are associated with increased prevalence of respiratory symptoms in the surrounding population. Modern, well-managed waste incinerators will only make a very small contribution to background levels of air pollution. Air-monitoring data demonstrate that emissions from the incinerators are not a major contributor to ambient air pollution. However, the contribution to local pollutant levels should be assessed on a site specific basis.

[...]

The majority (more than 90%) of non-occupational human exposure to dioxins occurs via the diet, with animal-based foodstuffs like meat, fish, eggs, and dairy products being particularly important. Limited exposure may also occur via inhalation of air or ingestion of soil depending on circumstances. Provided that strict emissions limits are adhered to, inhalation is not a significant source of exposure for the general public.

[...]

... current levels of dioxins emissions from incinerators are unlikely to increase the human body burden appreciably as incineration of municipal solid waste accounts for less than 1% of UK emissions of dioxins.

[...]

Health Studies

Studies in the UK have principally focused on the possible effects of living near to the older generation of incinerators, which were significantly more polluting than modern plant. The Agency has considered studies examining adverse health effects around incinerators and is not aware of any consistent or convincing evidence of a link with adverse health outcomes. However it is accepted that the lack of evidence of adverse effects might be due to the limitations regarding the available data.

A number of comprehensive reviews on incineration have been published. The Department for Environment, Food and Rural Affairs have recently commissioned a review of the effects of waste management, which was peer reviewed by the Royal Society. Cancer, respiratory disease and birth defects were all considered, and no evidence was found for a link between the incidence of the disease and the current generation of incinerators. It concluded that although the information is incomplete and not ideal, the weight of evidence from studies so far indicates that present day practice for

managing solid municipal waste has, at most, a minor effect on human health and the environment, particularly when compared to other everyday activities.

An earlier report by the Medical Research Council's Institute for Environment and Health on the "Health Effects of Waste Combustion Products" also concluded that 'epidemiological studies on people who work at or live near incinerators have shown no consistent excess of any specific disease'.

The Committee on the Carcinogenicity of Chemicals in Food, Consumer Products and the Environment has reviewed a large study by the Small Area Health Statistics Unit that examined 14 million people living within 7.5 km of 72 municipal solid waste incinerators, which operated up to 1987. The Committee concluded that, 'any potential risk of cancer due to residency (for periods in excess of ten years) near to municipal solid waste incinerators was exceedingly low and probably not measurable by the most modern techniques'. We agree with this view."

The Report concludes that:

"Incinerators emit pollutants into the environment but provided they comply with modern regulatory requirements, such as the Waste Incineration Directive, they should contribute little to the concentrations of monitored pollutants in ambient air. Epidemiological studies, and risk estimates based on estimated exposures, indicate that the emissions from such incinerators have little effect on health."

Health Impact Assessment

103. Dr. Anthony Staines argued that a Health Impact Assessment should have been carried out in respect of the proposed WTE facility, and that the information contained in the EIS was inadequate for the purposes of assessing the potential impact of the proposed facility on human health. He also made this case to An Bord Pleanála but this was not accepted by the Bord and should not be accepted by the Agency in circumstances where there is no legal requirement for same.

104. The brief of evidence prepared by Mr. Andrew Buroni on behalf of the Council for the purposes of the An Bord Pleanála oral hearing in April 2007 was submitted to the Inspector following the delivery of evidence by Dr. Staines. Mr. Buroni concluded as follows:

"Overall, having reviewed the EIS, together with the extensive community engagement programme, it is my opinion that the EIS constitutes a thorough investigation as to the potential health effects of the proposed Facility. Furthermore, although a formal HIA may be desirable from a practitioner perspective, it would add little to the evidence base or community understanding of the issues associated with the proposed Facility."

105. We also referred to the report prepared by Mr. Dan Murphy for An Bord Pleanála in relation to potential health impacts. That report concludes that:

"The information provided is as adequate as could be expected, based on technological developments and available research. I am basing my conclusions on the health evidence presented by all parties and my own analysis of the significant review documents on the subject of the health effects of Municipal Waste Incineration. The evidence presented included toxicological evidence (how the various pollutants might affect the body), and epidemiological evidence, (the extent to which proven medical statistical studies show that health has been harmed in a given situation involving the use of a particular industrial process). One of the main problems for observers in the controversies surrounding health effects in proposed industrial projects is the difference between hazard and risk. For a member of the public a possible hazard is perceived, automatically, as a possible risk. My own assessment is that this project is not a significant health risk if run according to plan."

106. The Council submits that the following comment in relation to health impact assessment contained in the Agency's Inspector's Report on the oral hearing in respect of a waste licence for Indaver Ireland for an integrated waste management facility (including a waste to energy plant) at Carranstown,

County Meath[19], should apply equally to the application currently before the Agency:

"The documents submitted by Indaver during the waste licence application process included assessments of the impact of the emissions from the facility on ambient air quality and the calculation of a theoretical intake of dioxins, based on soil concentrations, food intake and inhalation values for the MARI. The results do not indicate that any ambient standard or intake guideline will be breached as discussed above. The EIS therefore includes an assessment of the impact of the operation of the facility on human health.

HIA is defined in the Institute of Public Health of Ireland (IPHI) and Dept. Health & Children Guidance (2003) as a combination of procedures, methods and tools by which a policy, programme or project may be judged as to its potential effects on the health of a population and the distribution of those effects within the population. The document goes on to say that HIA overlaps with EIA but that HIA has a broader outlook on health. In the EU, the Amsterdam Treaty makes provision for HIA in policy making and it is at an early stage of development in Ireland. The HRB report makes no specific recommendation that a HIA for individual incineration or landfill projects should be carried out.

The IPHI Guidance referred to above outlines that a HIA may be done at three stages of a project; Prospective (developmental stage), Concurrent (during implementation) and Retrospective (after implementation). Given that the timeframe for commencement of the incineration plant would be at least two years, there is adequate time for a HIA to be carried out on behalf of the Department of Health and Children, the Health Services Executive or other relevant body."

[19] 27 June 2005, Register No. 167-1.

EPA Guidelines in relation to assessment of health impacts

107. The EPA "Guidelines on information to be contained in an EIS" state as follows at section 2.2.3 under the heading *"Maintain Environmental Focus and Scope"*:

"Effectiveness and efficiency in EIA are most easily achieved where all parties ensure that documentation and analysis is confined to those topics and issues which are explicitly described in the relevant legislation. It is important for all parties to maintain a vigilance against the use of EIA to evaluate a wide range of related, but not directly, environmental topics - no matter how well-intentioned or seemingly convenient. Matters such as landuse planning employment, economic, financial or health considerations are of relevance but only insofar as they are physically manifested at, or directly adjacent to, the development site. Evaluation and analysis is generally limited to areas where the indirect, secondary or cumulative impacts are either wholly or dominantly due to the project or development under consideration.

More detailed guidelines on scoping (see Section 3.1.2) provide specific criteria on how to ensure that the EIA remains focused on issues that:-

- *are environmentally based;*
- *are likely to occur;*
- *have 'significant and adverse effects'"*

108. At section 2.4.2 the EPA Guidelines state as follows in relation to Health & Safety:

"The physical environment is one of a number of recognised determinants of health which is often at the forefront of community concerns. Health can be affected by a number of direct and indirect environmental pathways, such as air, water or soil. Populations can be affected either by direct contamination or by induced effects on disease vectors, food chains and exposure to risks. EIA typically deals directly with the environmental pathways and the extent to

which these are affected by known contaminants, irritants or change inducing factors (e.g. nutrient enhancement or temperature change).

The evaluation of effects on these pathways is carried out by reference to accepted standards (usually international) of safety in dose, exposure or risk. These standards are in turn based upon medical and scientific investigation of the direct effects on health of the individual substance, effect or risk. This practice of reliance upon limits, doses and thresholds for environmental pathways, such as air, water or soil, provides robust and reliable health protectors for analysis relating to the environment.

Where anxieties about human health are understood to be of particular concern the scope of the EIS ensures that observance of and reliance upon conformity with recognised national and international standards is adequately related to the specific Health and Safety topic that are of local concern."

109. Thus, the guidance from the Agency is clear: air quality standards and emission limit values are the appropriate benchmark for measuring the effects of such emissions on human health. It would be beyond the scope of its own guidelines for the Agency to go further than this.

Cumulative impacts

110. The cumulative impacts of the proposed developments have been considered, primarily by the authors of the individual chapters of the EIS, but also by Ms. Ria Lyden, who presented evidence at the hearing. No significant adverse cumulative impact is predicted.

Precautionary Principle

111. The Precautionary Principle was raised by several objectors on the grounds that the health impacts have not been fully addressed, the design features, input characteristics and emissions are unknown and cannot be assessed and as such the Agency should take the precautionary approach and refuse the licence.

112. The Communication from the Commission on Application of the Precautionary Principle[20] states as follows:

"In some cases, the right answer may be not to act or at least not to introduce a binding legal measure. A wide range of initiatives is available in the case of action, going from a legally binding measure to a research project or a recommendation."[21]

113. Where action is deemed necessary, measures based on the precautionary principle should be, *inter alia*:

- *proportional* to the chosen level of protection,
- *non-discriminatory* in their application (i.e. comparable situations should not be treated differently),
- *consistent* with similar measures already taken (i.e. measures should be of comparable scope and nature to those already taken in equivalent areas in which all scientific data are available),
- *based on an examination of the potential benefits and costs* of action or lack of action (including, where appropriate and feasible, an economic cost/benefit analysis),
- *subject to review,* in the light of new scientific data, and
- *capable of assigning responsibility for producing the scientific evidence* necessary for a more comprehensive risk assessment.[22]

114. Paragraph 5.1 states:

"The precautionary principle is relevant only in the event of a potential risk, even if this risk cannot be fully demonstrated or quantified or its effects determined because of the insufficiency or inclusive nature of the scientific data.

[20] COM (2000) 1 final.
[21] Paragraph 5 of Summary, page 3.
[22] Paragraph 6 of Summary, page 3.

It should however be noted that the precautionary principle can under no circumstances be used to justify the adoption of arbitrary decisions."[23]

115. The Council submits that the following analysis, as stated by the Agency's Inspector in her Report on the oral hearing into the integrated waste management facility at Carranstown, should similarly be applied to the current application:

"The PD sets out the conditions under which the licensee can operate the facility. In reaching that decision it is considered that the Agency has assessed the information submitted and applied the available standards and guidelines to ensure that the facility will not have a significant impact on the environment or on human health.

This is in line with the Communication from the EC Commission on the Precautionary Principle -COM (2000)1."

Conclusion

116. The Council respectfully submits that the Inspector should recommend in her report on the oral hearing that a waste licence be granted for the proposed WTE facility, and in doing so that account is taken of the amendments and clarifications to the conditions of the Proposed Decision sought by the Council and to the submissions made on its behalf during the hearing.

[23] Paragraph 5.2, page 13.