Article 50 IED Requirements

Table 1 below describes how the DWtE facility meets the requirements of Article 50 of the IED. It should be noted that DWtE are not proposing as part of this IE Licence review application any Alternative Operating Conditions as set out in Article 51 of the IED.

Table 1. DWtE IED Article 50 Compliance

Article 50 IED Requirements	DWtE Compliance
1. Waste incineration plants shall be operated in such a way as to achieve a level of incineration such that the total organic carbon content of slag and bottom ashes is less than 3 % or their loss on ignition is less than 5 % of the dry weight of the material. If necessary, waste pre-treatment techniques shall be used.	The DWtE facility is operated in compliance with conditions of the site Industrial Emissions Licence W0232-01 as issued by the EPA and specifically in this instance Condition 8.2.3 (b) which deals with the management of residues. In this regard the DWTE facility is operated and maintained to ensure that the total organic carbon concentration in the bottom ash is consistently below 3% and for the most part is actually less than 1%.
2. Waste incineration plants shall be designed, equipped, built and operated in such a way that the gas resulting from the incineration of waste is raised, after the last injection of combustion air, in a controlled and homogeneous fashion and even under the most unfavourable conditions, to a temperature of at least 850 °C for at least two seconds. Waste co-incineration plants shall be designed, equipped, built and operated in such a way that the gas resulting from the co-incineration of waste is raised in a controlled and homogeneous fashion and even under the most unfavourable conditions, to a temperature of at least 850 °C for at least two seconds. If hazardous waste with a content of more than 1 % of halogenated organic substances, expressed as chlorine, is incinerated or co-incinerated, the temperature required to comply with the first and second subparagraphs shall be at least 1 100 °C. In waste incineration plants, the temperatures set out in the first and third subparagraphs shall be measured near the inner wall of the combustion chamber. The competent authority may authorise the measurements at another representative point of the combustion chamber.	The gas resulting from the incineration of waste is raised to a temperature of 850°C for a minimum of two seconds, when measured near the inner wall of the combustion chamber. This occurs after the last injection of combustion air, in a controlled and homogenous fashion and under the most unfavourable of conditions.
3. Each combustion chamber of a waste incineration plant shall be equipped with at least one auxiliary burner. This burner shall be switched on automatically when the temperature of the combustion gases after the last injection of combustion air falls below the temperatures set out in paragraph 2. It shall also be used during plant start-up and shut-down operations in order to ensure that those temperatures are maintained at all times during these operations and as long as unburned waste is in the combustion chamber. The auxiliary burner shall not be fed with fuels which can cause higher emissions than those resulting from the burning	Both boilers in the DWTE facility have two auxiliary burners each. Each burner is fitted with a retractable lance and an electronic ignition system. The burners switch on automatically when the temperature of the combustion gas after the last injection of air falls below 875°C thus ensuring that the temperature remains above 850°C at all times. The burners are also used at start-up and shut-down in order to ensure that the temperatures are maintained at all times during these operations and as long as unburned waste is in the combustion chamber. The auxiliary burners are fed using gas oil that complies with the Article 2(2) of Council Directive 1999/32/EC.

Article 50 IED Requirements	DWtE Compliance
of gas oil as defined in Article 2(2) of Council Directive 1999/32/EC of 26 April 1999 relating to a reduction in the sulphur content of certain liquid fuels, liquefied gas or natural gas.	
4. Waste incineration plants and waste co-incineration plants shall operate an automatic system to prevent waste feed in the following situations: (a) at start-up, until the temperature set out in paragraph 2 of this Article or the temperature specified in accordance with Article 51(1) has been reached; (b) whenever the temperature set out in paragraph 2 of this Article or the temperature specified in accordance with Article 51(1) is not maintained; (c) whenever the continuous measurements show that any emission limit value is exceeded due to disturbances or failures of the waste gas cleaning devices.	The DWTE facility has an automated system that prevents feeding of waste in the event of the following situations: 1) Until the minimum temperature of 850°C is reached as per Part 2 of Article 50 in Annex VI of the IED; 2) Whenever the temperature specified in Part 2 of Article 50 in Annex VI of the IED is not maintained; 3) Whenever the emission data in the CEMS system shows that any ELV is exceeded due to disturbances or failures of the air pollution control system.
5. Any heat generated by waste incineration plants or waste co-incineration plants shall be recovered as far as practicable.	The facility is designed to optimise power output. The facility is also designed for district heating purposes and when a district heating system comes into operation this can be implemented with minor modifications to the equipment. Electricity is generated on-site from the thermal energy produced by the combustion of waste. The two lines supply steam to one complete turbine/generator set with high-voltage system that is connected to the electrical grid. A small portion of this electricity is used to power the plant with the remainder exported to the national grid. The turbine design optimises the power output and thus the electricity supply regime, as no heat supply regime is in place at present. Cooling of the exhaust steam from the turbine takes place in a seawater-cooled condenser. The condenser pressure is minimised using cooling water from the River Liffey thus securing a higher electrical efficiency compared to that obtained with air-cooled condensers and/or wet cooling towers. The design results in a net power output of approximately 62 MW equivalent to a net power efficiency of approximately 32%. The Dublin District Heating system (DDHS) is currently being developed and is expected to be operation by c.2021. The DWTE facility will be the baseload for the DDHS which on its own will supply a heat source for over 50,000 homes. Once this is operational the DWTE facility will have net energy efficiency of over 88%.
6. Infectious clinical waste shall be placed straight in the furnace, without first being mixed with other categories of waste and without direct handling.	Not Applicable
7. Member States shall ensure that the waste incineration plant or waste co-incineration plant is operated and controlled by a natural person who is competent to manage the plant.	Please refer to Attachment 2-5-3 of this IE Licence Review Application for details on technical knowledge and competence.