Item 25

Solid Waste Strategy

Briefing Note on Emissions from Existing EfW Plant at Bellozanne and Proposed EfW Plant at La Collette 2

Information was provided to States Members for the debate on 27th June 2006, in the EfW Summary of Key Environmental Impact Assessment Related Issues (dated 20th June 2006). In Section 4, Air Emissions, it was explained that the emissions from the existing EfW Plant at Bellozanne were very much higher than the standards recommended by the EU Waste Incineration Directive (WID).

In order to explain the levels of the emissions by comparison with the recommended standards, it is necessary to refer to units of measurement of the emissions. These units are not ones that would be commonly encountered and are, therefore, somewhat difficult to understand. Because they are very small, they have names that reflect very small fractions of a gram.

A nanogram (abbreviation ng) is a unit of one thousand millionth of a gram (1,000,000,000th of a gram).

A femtogram (abbreviation fg) is a unit of one thousand million millionth of a gram (1,000,000,000,000,000th of a gram).

The WID lays down standards that must not be exceeded for various substances that will be emitted from the chimney of an EfW Plant, and these same standards apply to all types of EfW Plants, whether incineration, gasification, or pyrolysis. These standards for the various substances are shown in the attached table.

For the purposes of the above report, which was directed to States Members, it was decided to show diagrams for the dispersion of emissions of dioxins, as these are the substances that cause most concern. However, similar dispersion of emissions will apply to the other substances that are emitted. Although only dioxin emissions have been shown, it must be noted that there are emissions of other substances from the existing Plant, which are all above recommended limits and give cause for concern – Hydrochloric Acid (HCl), Sulphur Dioxide (SO2), Oxides of Nitrogen (NOx), and Dust.

The WID refers to the maximum permissible levels for substances that are emitted from the top of the chimney, and in the case of dioxins this is one tenth of a nanogram per cubic metre of air at normal temperature and pressure - 0.1 ng/ Nm^3. A new EfW Plant would likely be in the region of 0.02 ng/ Nm^3, i.e. one fifth of the maximum permissible level, and this allows a significant safety factor. The existing EfW Plant emits about 10 ng/ Nm^3, i.e. 100 times the permissible level and 500 times the level of a new Plant.

These emissions are then dispersed enormously by the action of the wind and air currents, and the results of the dispersion modelling show the levels that are likely to occur at ground level. Due to the enormous dispersion of the emissions from the top of the

chimney, the levels then have to be measured in the smaller units of femtograms per cubic metre of air, i.e. fg/ Nm^3.

The diagram showing the results of the dispersion modelling for the existing EfW Plant shows contours of levels ranging from a peak concentration of about 16 to 20 fg/ Nm^3 over much of St. Helier, to about 1 fg/ Nm^3 at the extremities of the Island.

To put these levels into context, it was stated in the report that the level that would normally be measured in a rural area of the UK is about 20 fg/ Nm^3, so it was not seen as a large cause for concern. And to show the comparison of a new EfW Plant, with flue gas cleaning, the peak levels would be about 0.2 fg/ Nm^3.

On this point, (although we do not yet have the Hansard minutes of the debate to confirm this) I believe that Deputy Duhamel quoted, during the debate, that the levels in Jersey from the existing EfW Plant were about 2 fg/ Nm^3, and therefore ten times less than the normal background level in the UK.

This did not take account of the peak level (16 to 20 fg/ Nm^3) over parts of St. Helier, and it must be noted that the levels of the emissions from the existing EfW Plant are additional to the background levels that exist in Jersey.

The only information that is available on dioxin levels in Jersey is from a survey that was carried out in 1997 by the Centre for Research into Environment & Health into the levels of Dioxins in Jersey Milk and Grass. This showed that the levels in Jersey were typical of rural sites in the UK or Northern Ireland.

Also, and most importantly, it must be noted again that the dioxin emissions are only one part of the emissions from the existing Plant. It has not been suggested that the dioxins are a large cause for concern, as mentioned previously, but, at the very least, the precautionary principle would require that the situation is improved. The other substances being emitted are of concern also, for various reasons, and should be addressed.

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