

## **APPENDIX D**

### 5.0 Stack Height Determination.

The background conditions utilised for the stack height determination (SHD) assessment are the same as those of the Air Quality Assessment. Again the data from the Zejtun real time monitoring station are used for background data for the study.

The validity of utilising data from the Zejtun real time monitoring station as a background data particularly for Marsaxlokk and Birzebbugia has been contested and is questioned as detailed in the submission of the 2nd October 2009.

As the predicted environmental concentration (PEC) is the sum of the process contribution and the background concentrations. As in all probability the background emission concentrations are higher for the reasons explained in section 4.2 above, it therefore follows that the environmental concentrations estimated in the SHD report are lower than would be actually measured at Marsaxlokk and Birzebbugia once the plant is in operation.

The assessment covers only NO<sub>2</sub> and SO<sub>2</sub> emissions only and concludes from the estimates presented that there are no significant lowering of ground concentrations beyond a height of 50m.

Clause 6.0 of the Stack Height Assessment concludes ( Appendix A5.1):

*“On the basis of the modelling results a stack height for the proposed plant at Delimara Power Station of 50m would not result in breaches of Air Quality Standards. Therefore on this basis a stack height of 50m would be appropriate, however the greater the stack height the lower the loading in terms of acid deposition and eutrophication on the local terrestrial ecology.”*

This conclusion is being disputed. The results obtained pertain to the analysis of the NO<sub>2</sub> and SO<sub>2</sub> emissions only, and these are based on the background concentrations from the Zejtun real time Monitoring station, and therefore inaccurate, and incomplete.

The study does not include any of the other emission pollutants which were considered in the Air Quality Assessment particularly PM<sub>2.5</sub>, PM<sub>10</sub>, and metals. The molecular weight of the metals in the emissions and also the weight of PM<sub>2.5</sub>, PM<sub>10</sub>, particles ( made up basically from carbon) far exceed the molecular weight of NO<sub>2</sub> and SO<sub>2</sub> molecules and therefore one would expect and completely different dispersion in the case of the heavier constituents.

A stack of a lower height would result, as one would expect, in higher ground level concentrations of PM<sub>2.5</sub>, PM<sub>10</sub>, and metal constituents nearer to the base of the Stack itself. It is basically for this reason that combustion plants fuelled by heavy fuel oil are designed to have stack heights which exceed 120m. The Stack of Phase 1, burning the same heavy fuel oil being proposed for the extension plant, is a case in point. This has a stack height of 150m.

It would seem "prima face" the stack height of 50m has been adopted as this height matches the height of the stacks of Phase 2b plant, which however burns Gasoil instead of the heavy fuel oil being proposed.

Once heavy fuel oil is to be used for the proposed plant, then the stack height should be much higher than 50m as proposed.

The Marsaxlokk local Council placed the following requests to MEPA for which AIS responded as follows:

1. investigate and revise the Stack Height Assessment calculations based on actual background pollutant concentrations measured at Marsaxlokk and Birzebbugia, the zone that will be most affected by the prevailing North Westerly winds.

AIS replied:

The Stack height determination (SHD) used background concentrations from Zejtun. The maximum ground level concentration, which is the basis of which the stack height is determined against AQS, are to the North East which is not an urban area and not close to Marsaxlokk and Birzebbugia. The use of background data from an "urban background site" rather than the actual data at this location which would be more characteristic of a rural background therefore incorporates a factor of safety.

The Marsaxlokk Local Council replies;

The basis of this whole argument has already been contested above. The Zejtun Site, due to its location North West of Delimara is not considered to provide information that represent the conditions in either Marsaxlokk or Birzebbugia. Simply relying on the claim that the Zejtun Site is considered to be representative of an "Urban Background Site" is not sufficient in this particular case.

Moreover the data obtained from the Site is, by MEPA own admission, compromised, so much so that it has indicated that the data for 2008 has not been verified.

Moreover the emission data from BWSC is not guaranteed.

The Marsaxlokk local council reiterates its request for the stack height determination to be revised utilising guaranteed data from BWSC and also utilising the actual background pollutant concentrations measured at Marsaxlokk and Birzebbugia, the zone that will be most affected by the prevailing North Westerly winds.

- investigate and determine the ground level concentration of PM<sub>2.5</sub>, PM<sub>10</sub>, and metal constituents based on the stack height of 50m being proposed, when burning heavy fuel oil.

AIS replied:

The stack height determination report concluded that a stack height of 50m would not result in exceedences in AQS's. Enemalta have proposed a 65m stack the ground level concentration of PM<sub>2.5</sub>, PM<sub>10</sub> and metal constituents have been determined in the Air Quality Assessment.

Please refer below for reply.

- verify whether the ground level concentrations determined in 2 above would satisfy the limits set by Directive 2008/50/EC comes into effect on the 11<sup>th</sup> June 2010.

AIS replied:

The Air Quality Assessment has assessed whether ground level concentrations would meet the AQS's set in Directive 2008/50/EC on the basis of a 65m Stack Height. This exercise has no relevance since a 50m stack height is not being considered.

Please refer below for reply.

- determine the optimal stack height that would result in the minimum possible ground concentrations of PM<sub>2.5</sub>, PM<sub>10</sub>, and metal constituents on the population of Marsaxlokk.

AIS replied;

The SHD concluded that increases above 50m bring minimal reductions in maximum ground level concentration. A 65m stack height was selected to provide even greater dispersion. The Air Quality Assessment has considered the ground level concentrations and predicts they will not exceed the AQS's set in Directive 2008/50/EC

In response to the replies provided to questions 2, 3, and 4 above the Marsaxlokk Local Council replies;

The whole Stack Height Determination is based on data obtained from the Zejtun Monitoring station which is not considered to provide information that represent the conditions in either Marsaxlokk or Birzebugia.

Moreover the data obtained from the Site is, by MEPA own admission, compromised, so much so that it has indicated that the data for 2008 has not been verified.

Moreover the emission data from BWSC is not guaranteed.

On this basis, the analysis is in the view of the Council null and void.

The Marsaxlokk local council reiterates its request to MEPA for the stack height determination to be revised utilising guaranteed data from BWSC and also utilising the actual background pollutant concentrations measured at Marsaxlokk and Birzebbugia, the zone that will be most affected by the prevailing North Westerly winds.

## **6.0 – Waste Management.**

The following is the submission made on the 2<sup>nd</sup> October 2009 by the Marsaxlokk Local Council. This section is being reproduced to enable the reader to understand the context in which the relevant questions were placed and the subsequent replies received from AIS.

### **6.1- Solid Waste**

The proposed 144MW diesel engine plant extension to Delimara Power Station can be fuelled either by heavy fuel oil or light distillate ( diesel oil ). It is stated in the report presented by AIS Environmental that the plant can, with modifications, be run of natural gas.

It is the intention of Enemalta, the developer, to run the plant on a 1% Sulphur heavy fuel oil. Clause 12.4.2( Appendix A6.1) indicates that due to the relatively high content of Sulphur the DeSOx process will generate some 30 tonnes of solid hazardous waste daily. Table 12.2 – Operational Phase Waste streams indicates that the DeSOx process will generate an estimated 9,880 tonnes of waste annually.

The report mentions that the developer has the intention of disposing of this waste at some treatment facility abroad. The transboundary exportation of such hazardous material is governed by the Basel Convention, and is subject to an IPPC permit. ( Clause 16.1 para3)

Furthermore the EIA clearly indicates that while the developer is fully aware of such legislative and administrative obligations, there are as yet at least , no indicative preliminary arrangements even if tentative, with any treatment facility abroad.

The EIA seems to attempt to excuse this state of affairs by stating that the position of the developer is understandable as,( Clause 12.4.2, para 6) *“the developer currently still seeks a planning permit to build the facility and still seeks and IPPC permit to be able to operate the plant”*.