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IS DE-NO_x BY SCR TO BE THE FUTURE IN US? – TECHNOLOGY AND TENDENCIES WITHIN APC-EQUIPMENT

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ABSTRACT

The paper will present available De-NO_x technologies as well as the paper will present the operational experience in European countries where the technology has been operating for approx. 10-15 years. The experience is based on Ramboll's experience with NO_x control on advanced WtE plants in Europe.

Technical SCR solutions will be discussed and specific technical obstacles and specific precautions to be taken will be highlighted and illustrated by showcases.

Investment and operating costs for SNCR versus SCR will be presented.

Finally it will be evaluated which effect De-NO_x at WtE facilities will have compared to the energy sector in general.

INTRODUCTION

The air emission limits have over the years been tightened both in Europe and in North America. Still more efforts are given by the European Union and the US EPA to implement stricter emission limits as well as WtE facilities are implementing more efficient technology in order to get a better public acceptance and to reduce the emission of pollutants.

NO_x emission has become a global problem and "hot-spots" have been identified in certain areas of US, Europe and Asia as illustrated in Figure 1.

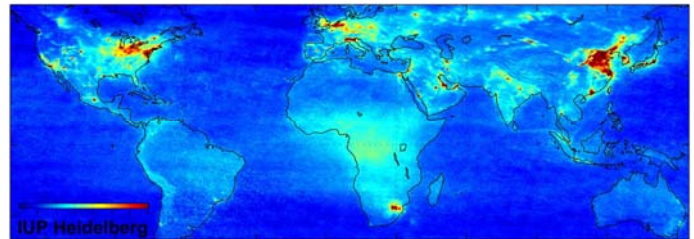


Figure 1. NO_x Hot Spot. Source. IUP Heidelberg, Institut für Umweltphysik

This has resulted in the fact that the NO_x emission limit for WtE facilities in US has been heavily tightened and recently new WtE facilities have to deal with emission limits less than 50% of the EPA emission limits.

The WtE facilities have to take into consideration the cost for investment and the cost for operating more and more efficient De-NO_x.

Until recently WtE facilities in USA have been equipped with the Selective-Non-Catalytic-Reduction (SNCR) technology to comply with the regulatory requirements - will it also be the way forward or will the regulatory requirements be so strict that Selective-Catalytic-Reduction (SCR) technology will be required for future plants?

EMISSION STANDARDS FOR WTE FACILITIES

Waste incineration produces flue gas that contains a spectrum of components (e.g. dust, acidic compounds, heavy metals, and dioxins). To avoid emission of these pollutants to the surroundings, extensive flue gas treatment (FGT) is necessary